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FUNDAMENTALS OF RURAL HEALTH WORK *

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In the presence of a medical audience it is unnecessary to emphasize the need for public health work in the rural sections of our country. It is now a well known fact that the natural advantages which the rural districts possess in favor of a healthful existence are more than offset by the better health protection afforded the city dweller. Malaria and hookworm diseases are almost entirely of rural origin, and there is much more typhoid fever and dysentery in the country than in cities. Tuberculosis also is surprisingly prevalent in rural districts. Rural health work is bound to experience a tremendous development during the next ten years, and as the work grows it is important that certain fundamentals be borne in mind. These I shall deal with briefly.

The first and greatest need is for the coordination of the health activities which are being introduced into rural communities. Under present conditions many rural districts are periodically aroused by a campaign in the interest of some particular health problem. The arguments put forth in favor of each immediately win the sincere support and interest of various elements in the community. Tuberculosis stands third as a cause of mortality in the United States; yet there are many rural communities in which little or nothing is being done to combat this disease. Surely a campaign directed toward its control and eradication should be most welcome. The venereal diseases bear a most important relationship to the welfare of the family and the progress of the race. Syphilis alone, if we are to accept the estimate of Osler, is responsible for approximately 125,000 deaths each year. Certainly the campaign to control venereal diseases should have every encouragement. But there are 50,000 mothers and infants dying each year from preventable causes; and there is the big problem of school health work, which must be encouraged if we are to develop a citizenry of young Americans 47 per cent. of whom will not be physically defective as was the case among the men of the recent draft. Mental hygiene is important in rural communities, and sanitation work and malaria control are entitled to all of the militant enthusiasm of the various other campaigns.

Should an expert in each of these branches seek a hearing before the county commissioners? Should health authorities encourage such efforts in the hope that rural health work will thus be rapidly extended?

The earnestness of purpose among advocates of special lines of health activities is deserving of great commendation, but the policy of conducting campaigns each dealing with some particular problem regardless of its relation to other similar problems is productive of confusion. National and state legislative bodies are asked for appropriations in behalf of special programs of work, and it is not unusual to find in the communities themselves several persons, each representing a different health activity, vying with one another for local appropriations to carry on their work.

The usual result of this state of affairs is that the advocates with the most active support, or with the most attractive and convincing method of presentation, win the laurels. Few, if any, are given what they ask; and often the appropriations allowed, while making a fair sized total, are so divided and apportioned that the results are far less than might be obtained from the expenditure of the same amount under a systematic plan of work.

The time is at hand when legislative bodies and the people themselves should thoroughly understand that no special line of health work can be complete in itself; that the whole problem of health and disease is so interrelated and complex that it is impossible to make satisfactory progress along one line unless it is conducted in a definite and proper relation with all others.

What worth while results can be accomplished in tuberculosis, for example, unless conditions affecting the spread of all the communicable diseases that lower the vitality and render the individual an easy victim to tuberculosis are controlled? Safe milk and water supplies must be assured. Satisfactory methods of sewage disposal must be installed. Infants must be properly reared. Personal and school hygiene must be taught and observed. Medical examinations of school children must be made, and defects and abnormalities corrected. In short, the control of tuberculosis is not a problem by itself, but depends on all the varying activities that go to make up a well balanced public health department.

Likewise, an important part in the protection of the health of mothers and infants lies in the control of communicable diseases, especially venereal diseases, the provision of safe water and milk supplies, adequate methods of sewage disposal, and a generally healthful environment.

The fundamental need is not for the development of numerous specialties to be introduced into local communities independently, but for the establishment of an efficient, whole-time local health service through which the measures necessary for the benefit and protection of the public health may be conducted in logical

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sequence and in proper relation to one another. Until such a single definite program of local, state and federal health work is generally recognized and adopted, different agencies will continue to work at cross purposes, appropriating bodies will lack confidence and withhold support, the medical profession will be subjected to constant irritation from many sources, and the general public will remain confused and skeptical.

As long as these conditions exist there is little hope of greatly extending the work of preventing disease and promoting health to the 90 per cent. of our rural population which is yet unreached. On the contrary, enthusiastic individuals are prone to exaggerate the results to be derived from their specialties to such a degree that their claims are not substantiated, and the consequent disappointment and disillusionment tend to discredit not only the particular line of work in which they are actively interested but all other health activities as well.

Notwithstanding the present unsatisfactory situation, the solution of the problem has been carefully and painstakingly worked out during the last ten years through the cooperative efforts of federal, state and county authorities with generous assistance from certain nonofficial agencies. The plan provides:

1. That the health needs of every community be administered through a whole-time local health organization with a competent public health director at its head, to be paid in large part from local taxes.

The various lines of work to be established and the order in which they should be taken up depend entirely on local conditions and resources, and can be determined best by the man on the job, who understands these conditions and the temper of his people.

Only one annual appropriation covering all health activities embodied in the budget of the health department need be made by the county authorities who have one responsible head to look to for results.

2. That the state department of health procure the initial establishment of local health departments, and give financial assistance in the beginning when necessary, but always maintain sufficient influence to insure the efficiency of the work and to protect the local health officer from removal except for just cause. The state should contribute toward the salary of the health officer a sufficient amount to compensate him for certain duties which such an official is usually required to perform for the state board of health, and it should contribute toward the support of the health department the proportionate share which the state owes the county for its work in the prevention of the intrastate spread of disease. It is the further duty of the state board of health to act in a consulting and an advisory capacity, and to furnish educational material.

The several divisions or bureaus of the state board of health should be equipped to provide the local health departments with the expert assistance that is needed to enable them to establish and maintain the various special lines of work as it becomes necessary and desirable to take them up.

It is the function of the federal government to cooperate with the states in carrying out their laws and regulations for the protection of the public health. The interests of the federal government in preventing the spread of disease between the states and in promoting general health and prosperity are best served by aiding in establishing, developing, strengthening and maintaining the efficiency of state and local health departments, and all governmental health activities in cooperation with the states should be conducted toward this end.

The federal government should be in a position to work out with each state its own peculiar problems, and to extend the kind of assistance that is most needed. Appropriations specifically for the control of malaria, tuberculosis, hookworm disease or any other single branch of health work are not conducive to the best interests of the country as a whole. They lead to the overdevelopment of certain kinds of work, while the greatest needs of the community may be along entirely different lines.

A national program of public health work that would enable the federal government to work out with each of the states the best plan for meeting the problems of that particular state and then to assist in putting it into effect would be simple and rational. If all of the separate appropriations for various lines of cooperative health work with states were combined and administered in accordance with such a plan, the cause of public health would be immeasurably advanced and much needless overhead would be eliminated.

While the official health agencies are concerned with things and conditions affecting the health of all alike and over which the individual has no control, it is the practicing physician who should determine the health needs of the individual and prescribe the measures necessary in each specific case. In other words, the public health official creates a favorable environment in which the individual may carry out the instructions of his physician—his personal health adviser. It is the aim of the public health official to have the fewest possible deaths in the community, while the skill of the practicing physician is devoted to saving the lives and maintaining the health of the individuals of which the community is composed. Both are working toward the same end; both attain the highest degree of success by similar achievement—the saving of human life and the protection and promotion of health.

With this conception of the relationship between the public health official and the private practitioner, the existence of other than the most cordial cooperative relation is inconceivable. The field of each is separate and distinct; the one supplements the other and contributes to his success. It would be absurd to hold that the public health official, whose entire time and thought and energy are invariably demanded by his own specific problems, is capable or desirous of interfering with the work of the private physician. It is equally absurd to hold that the busy practitioner wants to perform the duties of the health department, or that he resents the work of that agency because an unhealthful environment would result in a greater demand for his services. The interests of these two workers for the common weal are closely interwoven—each should demand and receive the cordial cooperation of the other.

The practitioner has been accused of lack of interest and cooperation in public health work, of being critical and of standing aloof. Much of this is undoubtedly true. I am inclined to believe, however, that the difficulty is due in large measure to the fact that public health officials too frequently assume that members of the local medical profession are familiar with the scope and purpose of the work, the methods employed, and the results which they hope to accomplish. When these points are thoroughly explained, the active interest of the practitioner is usually awakened and his cooperation is freely given. It occasionally happens that the antag-

onism of the local medical profession is aroused by some well intentioned enthusiast in some specialty or other who, by obvious unsoundness and impracticability, creates the impression that health work is represented by persons without any sense.

In my own experience I have yet to find an instance in which a rational logical plan of local public health work with the state board of health and the United States Public Health Service behind it has not received the whole hearted support and assistance of the leading physicians in the community. On the contrary, I can cite case after case in which the county health program has gone across solely because these physicians made it their business to arouse their fellow citizens to the value of the work and appeared before the appropriating bodies of their districts with most eloquent and telling support. I have seen these physicians give freely of their time and skill in assisting the health officers of their counties and contributing to the success of the health departments which they were instrumental in establishing. I have in mind instances in which the county medical societies decided to secure for their counties well organized and efficient public health departments as the greatest contribution which they could make to the health and prosperity of the people. They summoned representatives from the state and Public Health Service, agreed on the cooperative plan to be put into effect, held mass meetings of the citizens to gain popular approval and support, and then went before the county commissioners and secured the counties' share of the budget. These health departments today are flourishing institutions accomplishing all that was hoped for them and more, and are the pride of the county medical societies which were responsible for them.

CONCLUSION

May I urge that these facts be borne in mind:

1. There is one tried and proved method through which public health work may be conducted satisfactorily—by local whole-time health service.

2. State and federal health agencies are in duty bound to assist and share in this work. Their only purpose is to see that it is successful—that the county gets its money's worth.

3. The plan of work to be carried out in any community depends entirely on the local needs. The kind of work that will accomplish the most good should be undertaken first. Other lines may be developed in the order of their importance as public interest and support permits.

4. The extent and expense of local health service depend on the character and resources of the community. There is a type for almost every condition.

5. The practitioner must ever be an important factor in local public health administration. If the program is sound, and he understands in advance the scope of the work and the methods to be employed, he will contribute his full share toward making it successful.

ABSTRACT OF DISCUSSION

DR. VICTOR HEISER, New York: Dr. Draper's paper shows that county health work is in the way to realization and that much toward standardization has already been accomplished. He speaks with knowledge based on experience actually acquired in the field. He is probably one of the pioneers in county health. In my travels of the last few years I have been greatly impressed with the fact that the health budget is the one that always receives the greatest cut. In every country, as a result of the world-wide economic depression, it has been necessary to make retrenchments. Those retrenchments almost always fell most heavily on the health service. Why is that? Why should health services be curtailed more than other fields of governmental endeavor? The answer may be found in the fact that the public is not sufficiently informed of the value of public health. In the language of the day, health has not been sufficiently sold. One of the best ways to sell health is by demonstration. The development of public health in a democratic country like the United States has been too much from the top; and, if we are to make progress from the bottom, health education should be more widely disseminated. The support of the public is essential. One of the aids to public support is to prove that health has genuine value and practical benefit for the individual. In the not distant past, appropriations have been made on the demand of state boards of health without much real public support. County health work is going to make it possible to make a demonstration of what modern public health has to offer, and then public support will follow. Standardization is important if general application is to come about quickly. The general lines that Dr. Draper has laid down are based on experience, and they give promise that not much modification will be necessary. A full-time county health service in practically every country in the United States should be the goal.

DR. H. A. PATTISON, New York: It was my privilege last winter to do some preliminary organization work in establishing a health demonstration in a western county of New York for the New York State Charities Aid Association. Naturally, I was much interested in Dr. Draper's paper, and, as he proceeded, I found that our technical problems were in every point similar to those presented by him today. We felt that if a health demonstration is to be conducted thoroughly, it should be done through the constituted authorities; that it should actually be a demonstration by and through the local officials of the county health unit. It was necessary in New York to take advantage of a new law in order to develop a county health department. This was done, and the permanent county health officer is Dr. L. D. Briscol, who was the health commissioner of Maine. We found that while the primary need was administrative facilities, the first thing we had to do was to deal with a scarlet fever and smallpox epidemic. That offered the best opportunity for service, and we placed nurses and automobiles at the disposal of the various local health officers. We had an opportunity to cooperate with the United States Public Health Service, or to ask its cooperation, in dealing with a case of leprosy that appeared from Panama. Every word of Dr. Draper's paper contained fruit. It outlined, to my mind, precisely the procedure which should be carried on in every community. We had every cooperation from the local medical society. Without any difficulty at all we secured the help of the county medical society in procuring appropriations, and we obtained from the county board of supervisors $9,000 for the first year's work in public health. They have already appropriated $59,000 for the county sanatorium, and had also appropriated $6,000 for bovine tuberculosis control.

DR. WALTER V. BREM, Los Angeles: As a representative of the medical profession engaged in the practice of medicine as distinguished from public health work, I was delighted with Dr. Draper's paper. Every man practicing medicine should be an auxiliary health officer. The health department must depend on the general profession for information as to what is going on in the community, and every man who is practicing ought to realize that it is his duty to give the health officer every particle of information that he can secure. I feel that the profession in California has been especially awakened to this necessity through the political battles that we have fought during the last four years, trying to repulse those who have been attacking the principles of public health work. In Los Angeles, two years ago, we fought a battle in which we helped to defeat the incumbent mayor, who had been guilty of catering to one of the cults, and the first item in the questionnaire that we presented to the other mayor and to the men who were running for the city council and the board of education was: "Do you believe that one of the

highest functions of government is the protection and advancement of the health of the people?" I think that this was the first time a political battle had ever been fought out with such a principle as one of the leading planks in the platform. I was delighted also to hear Dr. Draper say that the health departments should not invade the field of the private practitioner. We believe in government activities in the prevention of disease but we do not believe in governmental invasion of the field of medical practice. However, we do believe in a close cooperation between the two. Just now we are suffering from the fact that, under the new state administration, the budget of the state board of health has been tremendously cut and that its activities have been tremendously hampered. We believe that the administration will later hear from the medical profession of California, which will come to the support of the board of health.

INTRAVENOUS USE OF DIPHTHERIA ANTITOXIN

REPORT OF A SERIES OF CASES

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The liberal use of antitoxin subcutaneously and intramuscularly in the treatment of diphtheria has been a routine precedure for thirty years, with a great reduction in the mortality as compared with preantitoxin days. Its use intravenously, however, has not been a common or general practice. That this method of administration is advantageous and safe under certain conditions has been shown many times in recent years. My purpose in this report is to present a small series of cases in which antitoxin has been given intravenously and to draw attention again to some of the advantages and limitations of this route of injection.

The present report is based on a review of the cases of diphtheria treated in the Ernest Wende Hospital, Buffalo, between June 30, 1921, and July 3, 1922.

The two principal types of diphtheria, nasofaucial and laryngeal, do not present the same problems in therapy. In "straight" laryngeal diphtheria, the toxemia is usually not great. The aim of specific therapy is to reduce the edema and to loosen the membrane in the larynx quickly, and thus spare the patient from a prolonged and severe fight. In nasofaucial diphtheria, the toxemia is the factor to combat. The goal is to neutralize as quickly and completely as possible the toxin present in the patient's body and so spare the tissues from its immediate and late effects. Mixed types usually start with involvement of the fauces or nose, extension into the larynx being secondary. They fall into the nasofaucial group therapeutically.

The mode of action of diphtheria toxin needs no description here. However, a point worthy of attention is the fact that, when firmly established, the toxin-tissue combination cannot be split or reversed, though some authorities [1] state that large doses of antitoxin may break down this union if given within from twenty-four to forty-eight hours of its formation.

RATIONALE OF INTRAVENOUS ADMINISTRATION

Time is an important factor in the serum therapy of diphtheria, especially in severe and late cases, as delay permits the relatively large amount of toxin to act, unopposed by antitoxin. By injecting antitoxin into the vein, the whole amount becomes immediately available for neutralizing the toxin. When injected intramuscularly or subcutaneously, it enters the circulation much more slowly. An example from an article by Dr. William H. Park [2] shows this very clearly:

A child weighing 25 pounds (11.3 kg.) receives 10,000 units of antitoxin. If it is given subcutaneously, in twelve hours there will be 1.5 units per cubic centimeter of blood; if intramuscularly, in twelve hours 4.5 units and in forty-eight hours 4 units; if intravenously, immediately 12 units and in forty-eight hours 8 units.

All the cases in this series, selected to receive antitoxin intravenously, were classed on admission as severe, very severe or late. Many were practically moribund when brought to the hospital. A second intravenous or intramuscular dose was not infrequently decided on, when the clinical improvement following the first dose was not satisfactory, though theoretically all the antitoxin needed should be given in the first dose.

TECHNIC

Stock concentrated antitoxin issued by the laboratory of the New York State Department of Health was used exclusively. No intradermal test was done or desensitizing dose given as a routine preliminary to the intravenous injection. All patients received antitoxin intramuscularly in addition to the intravenous dose. Being unfamiliar with the state antitoxin as used intravenously, I hesitated at first to give full amounts by the latter route.

Selection of Serum.—Early in the series less attention was paid to the selection of the antitoxin to be used intravenously, except that serums showing cloudiness were set aside for intramuscular use only. Later, the different lots of antitoxin were examined as received, and only those showing a high titer (1,200 units per cubic centimeter or over) and great clarity were reserved for intravenous administration. This selection resulted in a reduction in the frequency and severity of the so-called foreign protein reactions (chill, hyperpyrexia, etc.) following the injection.

Administration.—Careful asepsis was observed. The serum was injected into the vein at the elbow, either undiluted, or more frequently, diluted from eight to fifteen times with sterile physiologic sodium chlorid solution. When diluted, the gravity arsphenamin technic was used, with the solution warmed to slightly above body temperature. In both methods the injection was made very slowly, taking from five to fifteen minutes, according to the amount. The patient was watched closely for immediate evidences of reaction, and the injection was stopped if these appeared.

After-Care.—The patient was watched closely, kept flat in bed, and covered warmly. In those cases in which a chill developed, hot water bottles were banked about the trunk and extremities, sponge baths given for rise in temperature, and in some instances epinephrin or camphor or both were used subcutaneously for immediate urticaria and for signs of cardiovascular disturbance (both uncommon).

IMMEDIATE REACTIONS

In 50 per cent. of the cases the injection was followed by a chill. This varied in severity from a transient rigor to a severe chill with hyperpyrexia, tachycardia and cyanosis. A dose of antitoxin intramuscularly, preceding the intravenous dose by a few hours to four or five days, reduced slightly the liability to chill. The

1. McCollum and Place, in Osler and McRae's System of Medicine.

2. Park, W. H.: The Use of Antitoxin in the Treatment of Diphtheria, J. A. M. A. 76: 109 (Jan. 8) 1921.

use of saline solution as a diluent apparently increased somewhat this liability (Table 1).

The frequency of occurrence of a chill was the same in adults as in children. When the adults did react, the chill was usually sharper than in children.

TABLE 1.—*Reaction Following Intravenous Antitoxin*

	Number of Patients	Patients Having Chill
In Relation to a Preceding Intramuscular Dose:		
No preceding antitoxin	26	15
Intramuscular dose preceding	25	11
In Relation to Use of Saline Solution as Diluent:		
Antitoxin given undiluted	11	3
Antitoxin diluted with saline solution	25	14

Six patients received a second intravenous dose from five hours to three days after the first. Four had had a chill following the first dose, but none of the six showed the slightest reaction after the second, whether the serum was given undiluted or in saline solution. In certain very severe cases, the patients being almost moribund on admission, no chill or febrile reaction to the intravenous antitoxin was manifested.

There were four fatal cases in the intravenous group. All these patients had extensive faucial or nasopharyngeal, as well as laryngeal, membrane, and three had bull neck. For this reason they might well be classed in the nasofaucial group as regards prognosis. Considering the fact that the fourteen intravenous cases were more severe than the average, many of them being mixed types, I feel that the mortality would have been much higher among them had it not been for the antitoxin given intravenously. Except for one patient, who developed a mild laryngeal paralysis and wore the tube for seventeen days, the patients with nonfatal intravenous cases wore their tube for an average of two and one-half days, as compared with an average of four days for the entire group of sixty-four cases.

Nasofaucial Cases.—One hundred and seventy-two patients with nasal and faucial diphtheria were admitted during the year. Forty received antitoxin intravenously as well as intramuscularly. The condition of most of them was very severe or malignant in type, the kind for which experience says there is a poor prognosis under any circumstances. Others were less obviously desperate, but had been sick for from three to five days or more without antitoxin. The latter have a little better prognosis than the former.

TABLE 2.—*Patients Receiving Antitoxin Intravenously: Comparison of Laryngeal and Nasofaucial Cases**

	No. of Patients	Age, Years	Day of Disease Admitted	Day of Disease First Dose Antitoxin Given	Patients Receiving Antitoxin Before Admission, per Cent.	Patients with Bull Neck, per Cent.	Patients with Involvement Outside Larynx, per Cent.	Intubated, per Cent.	Length of Time Wore Tube, Nonfatal Cases, Days	Average Dose Antitoxin Intravenously	Average Total Dose Antitoxin	Mortality, per Cent.	Mortality Excluding Deaths Within 24 Hours, per Cent.	Gross Mortality for all Patients Admitted, per Cent.
Laryngeal..	14	10.7†	4.3	4.5	28	21	69	78	3.9	8,100 units	20,200 units	29	16	26
Nasofaucial	40	10.21	3.7	3.4	22	75	..	..	...	9,160 units	48,250 units	42	32	32

* Figures represent averages when not indicated as percentages.
† Excluding two adults, 6.5 years.
‡ Excluding five adults, 8.1 years.

TABLE 3.—*Nasofaucial Cases in Which Antitoxin Was Given Intravenously: Comparison of Fatal and Nonfatal Cases*

	No.	Age, Years	Day of Disease Admitted	Day of Disease First Dose Antitoxin	Day of Disease Intravenous Dose	Antitoxin Intravenous, Average, Units	Total Antitoxin Average, Units	Average Extent of Membrane†	Bull Neck, per Cent.	Hemorrhage, per Cent.	Chill, per Cent.	Patients Having Complications
Fatal cases	17	7.1	3.7	3.3	3.8	9,750	49,280	+++	100	41	64	16
Nonfatal cases	23	12.3*	3.8	3.5	3.9	8,730	47,350	++	56	4	68	16

* This figure includes five patients over 16 years of age; excluding these, the average age would be 9.1 years for the remaining patients in this group.
† Each + represents one part involved, i.e., tonsils or nose or palate.

SERUM RASH

The frequency and severity of the serum rash bore no relationship to the mode of administration. It frequently appeared, however, on the fourth or fifth day in the "intravenous" cases. Some patients showed two crops of urticaria, an early one apparently due to the intravenous dose, and a later one due to the intramuscular.

A much more potent factor in causing the serum rash was the particular lot of antitoxin used, some lots producing quite uniformly little or no rash and others causing a troublesome and prolonged urticaria. The severity of the rash did not parallel the severity of the immediate reaction to the intravenous dose.

RESULTS

Laryngeal Cases.—Sixty-four patients with laryngeal diphtheria were admitted during the year covered by this report. Fourteen received antitoxin intravenously as well as intramuscularly. They were, as a rule, the most severe cases. The mortality rate for these fourteen cases was practically the same as for the entire group of sixty-four cases (Table 2).

The mortality in the intravenous group was 42 per cent., aganist 12.2 per cent. for all the nasofaucial cases. The remaining 132 patients received their antitoxin intramuscularly only. Among the latter there were four deaths (3 per cent. mortality). Four fifths of the nasofaucial cases terminating fatally were in the intravenous group.

This is certainly a high mortality, but it should be remembered that practically all the severe cases were picked for intravenous therapy, leaving only the milder cases in the intramuscular group. In the group of severe cases thus treated (intravenous group), 58 per cent. of the patients recovered.

A comparison of the fatal and nonfatal cases in the intravenous group will be of interest. Five points are worth noting in the fatal cases (Table 3):

1. These patients, on an average, were five years younger than in the nonfatal cases.
2. The membrane was more extensive.

3. One hundred per cent. had "bull neck," as compared with 56 per cent. in the nonfatal cases. Also the "bull neck" was more severe in degree.
4. Hemorrhage occurred more frequently.
5. Complications were more frequent and often multiple.

Although the cases which ended fatally after the administration of intravenous antitoxin were the most severe in type, the nonfatal cases were also severe, among which a high mortality might have been expected.

HEMORRHAGE AND NEPHRITIS

It has been asked whether hemorrhage and nephritis may not have been induced by the intravenous administration of antitoxin.

Purpura and hemorrhage from the mucous membranes, ranging from slight oozing to uncontrollable bleeding from the nose, mouth, and even conjunctiva, were encountered in eleven "intravenous" cases (nine nasofaucial and two laryngeal, Table 4). Ten of these patients died in spite of the use of various hemostatic measures and, in some cases, of whole blood intramuscularly. Transfusion was not done in any case.[3] In the eleventh case, there was slight bleeding from the mouth for a day, stopping spontaneously. In three of these eleven cases, the bleeding began before the antitoxin had been given intravenously.

Hemorrhage also occurred in five patients who did not receive an intravenous injection of antitoxin; two died.

Of the total of sixteen patients who showed hemorrhage, twelve (75 per cent.) had "bull neck" and two more had extensive cervical adenitis without surrounding edema, evidencing the severity of the disease in these cases. A large number also had positive smears for Vincent's bacillus and spirillum.

TABLE 4.—*Occurrence of Hemorrhage, Nasofaucial and Laryngeal Cases Combined*

	Total Number	No. with Mild Hemorrhage	No. with Severe Hemorrhage	Average Type of Cases
Patients with antitoxin intramuscularly only	182	4	1	Mild to moderate
Patients with antitoxin intravenously	54	3	8	Severe to malignant

Once established, more antitoxin intravenously or intramuscularly had no effect in arresting the hemorrhagic tendency. Unfortunately, cultures were not made from the throat and nose of these patients to determine the presence or absence of secondary invaders, such as streptococci and staphylococci. It is possible that such organisms may play a part in the production of hemorrhage.

The incidence of hemorrhage bore no relationship to the occurrence or severity of the immediate reaction to the intravenous dose, nor was it more severe or earlier in onset following the use of physiologic sodium chlorid solution as a diluent. Evidently, then, the intravenous administration of antitoxin was not the cause of the bleeding.

Renal disturbance is of frequent occurrence in the severer forms of diphtheria. For the purpose of this report, a patient is considered as having had nephritis, if there were albuminuria, leukocytes and frequently casts persisting beyond the acute stage of the disease. In many, the renal involvement was mild, clearing up quickly.

The incidence of this complication (or sequel) depended on the degree of toxemia present, not on the intravenous administration of antitoxin (Table 5). It will be noted that of the laryngeal patients, in whom the toxemia is ordinarily much less severe than in the nasofaucial, all showed about the same percentage of nephritis, whether antitoxin was given intravenously or not. Though conclusions drawn from such small numbers as are here reported are open to error, it appears that among severe nasofaucial cases antitoxin given intravenously reduced the frequency of kidney damage.

TABLE 5.—*Occurrence of Nephritis: Percentage Incidence in Different Groups*

	All Cases, per Cent.	Patients with Antitoxin Intravenously, per Cent.	Cases Classed as Severe, in which Antitoxin Was Given Intramuscularly Only, per Cent.
Nasofaucial group.....	22	50	75
Laryngeal group.....	14	18	16

REPORT OF CASES

A few representative cases are detailed:

CASE 1.—A boy, aged 6 years, was admitted, Jan. 22, 1922, on the third day of disease, as a severe case. There was no history of previous serum injections. A membrane involved the nose, pharynx and larynx. The cervical lymph nodes were enlarged, but there was no edema. Nose and throat cultures were positive for the diphtheria bacillus. Intubation was done on admission, and reintubation on two occasions; the patient wore the tube for three and one-half days.

Twenty-four hours before admission, 24,000 units of antitoxin was given. On admission, 30,000 units was given intramuscularly. Twelve hours later, 9,000 units, diluted in 150 c.c. of saline solution, was given intravenously; no chill followed. The child slept soundly after the intubation and injection. Six hours later, the temperature, pulse and respiration had fallen, and the patient showed definite clinical improvement. A serum rash of moderate severity appeared on the fifth day after the intravenous injection. Palatal paralysis developed on the eighth day in the hospital. The patient improved and was discharged convalescent, the thirteenth day after admission.

CASE 2.—A girl, aged 7½ years, was admitted, March 16, 1922, on the third day of the disease as a severe case. No history of previous serum injections was obtained. Membrane involved the tonsils, soft palate and probably the nasopharynx. Marked bull neck was present on the right side. Throat culture was positive for diphtheria bacillus. There was a moderate mitral regurgitant murmur present, completely compensated for.

Before admission, no antitoxin had been given; on admission 10,000 units was given intravenously in 150 c.c. of saline solution, and 24,000 units intramuscularly; there was no preliminary intradermal test. The injection was followed in half an hour by a severe chill which lasted fifteen minutes; the temperature rose from 101.2 to 103.7; the pulse, from 90 to 130; respirations, from 24 to 30. The child was restless and slightly delirious. Ten hours after the injection, the temperature was 98; pulse, 104; respiration, 28. Next day the child was brighter, was rational, and took fluids well. Three days after the injection, the membrane had disappeared, and the neck showed only slight swelling and tenderness. A mild serum rash appeared ten days after the injection, lasting four days. The patient became a convalescent carrier, the organism later proving to be nonvirulent. April 5, she showed a small ulcer on the tonsil, from which Vincent's spirillum and fusiform bacillus were detected by smear. This cleared up promptly under arsphenamin in glycerin locally. There

3. In a verbal communication to me, Dr. Reuben Ottenberg of Mount Sinai Hospital, New York, stated that he had performed a blood transfusion in a severe case of diphtheria with hemorrhage. The bleeding was arrested, but the patient died later from the toxic effects of the disease.

were no other sequelae. The patient was discharged well, April 16. This was a severe case with sharp chill and febrile reaction following the intravenous dose. There was prompt clinical improvement and rapid clearing of membrane.

CASE 3.—A girl, aged 12½ years, was admitted, May 25, 1922, on the fourth day of the disease, as a severe, toxic case. There was no history of previous serum injections. An extensive, hyaline membrane covered the tonsils, pillars, uvula, pharyngeal wall and half of the soft palate. The cervical lymph nodes were markedly enlarged, with some surrounding edema. There was pallor and poor circulation. The breath had a foul odor. Nose and throat cultures were positive for the diphtheria bacillus.

Before admission, no antitoxin had been given; on admission, 30,000 units was given intramuscularly, and 15,000 units intravenously in saline solution. A severe chill began before the injection was completed, but the full dose was given and the child put to bed with hot water bottles, and a dose of camphor in oil. The pyrexia subsided in a few hours. Eighteen hours later, there was some bloody discharge from the mouth, and the membrane had not loosened; 15,000 units of antitoxin was given intramuscularly.

May 28, the membrane was still extensive; 9,000 units in 200 c.c. of saline solution was given intravenously; no chill or febrile reaction followed, and the patient showed clinical improvement thereafter. The same day the laboratory reported a throat smear as positive for Vincent's spirillum and fusiform bacillus. Under arsphenamin locally, the membrane disappeared in four or five days, and the throat healed. A severe serum rash appeared, May 29, and lasted five days. The urine showed albumin, leukocytes, erythrocytes and casts, June 5, improving greatly under appropriate treatment by June 26. On this day the blood showed: urea nitrogen, 13.3 mg. per hundred cubic centimeters, and uric acid 3.25 mg. per hundred cubic centimeters; the urine, the slightest possible trace of albumin, and negative sediment. Pronounced palatal paralysis appeared, June 1, and persisted until discharge; the heart showed tachycardia and muffled sounds, but no irregularity. The patient was discharged improved, July 3.

This was a severe late case complicated by slight hemorrhage from the throat and followed by palatal paralysis, moderate myocarditis and nephritis. Clinical improvement followed the intravenous antitoxin, but there was slow clearing of the throat, owing to the presence of Vincent's bacillus. My feeling at the time was that the first intravenous dose prevented a fatal outcome.

CASE 4.—A boy, aged 8½ years, was admitted, May 26, 1922, on the fifth day of the disease as a very severe, toxic case. There was no history of previous serum injections. The membrane involved the nose, tonsils, pillars, uvula and pharynx. Bull neck was marked. Cultures were positive for the diphtheria bacillus. The temperature was 103; pulse, 140; respiration, 28.

Before admission, no antitoxin had been given. On admission 30,000 units was given intramuscularly. Nine hours later, 12,000 units was given intravenously diluted in saline solution, followed in half an hour by a chill of moderate severity lasting twenty minutes, when the temperature rose to 103.2; pulse, 140; respiration, 36. After a cool sponge bath, the pulse dropped to 110. Five hours after the injection, the temperature was 100.2; pulse, 110; respiration, 26. Three days later, most of the membrane was gone, and there was very little nasal discharge. The pulse was slightly irregular and not strong. The urine showed albumin, casts and leukocytes, June 2, clearing up entirely by June 14. Subsequently, the pulse remained somewhat fast, but was not irregular. The patient was discharged, June 20, well except for moderate tachycardia.

This was a very severe case; the patient had been ill five days without antitoxin. A moderate chill and febrile reaction followed the intravenous dose; there was prompt clinical improvement and clearing up of the membrane thereafter. There was a mild attack of nephritis and moderate myocarditis.

CASE 5.—A boy, aged 13½ years, was admitted, May 27, 1922, as a severe, toxic case; he was said to have been sick for two days at home. There was no history of previous serum injections. The membrane involved the nose, tonsils, pillars, uvula and probably the pharynx; there was a very foul odor to the breath. A slight degree of bull neck was present. Nose and throat cultures were positive for the diphtheria bacillus.

Before admission, no antitoxin had been given. On admission, 15,000 units undiluted was given intravenously, and an hour later 30,000 units intramuscularly. A severe chill lasting fifteen minutes and accompanied by vomiting followed the intravenous injection; epinephrin was given hypodermically, and hot water bottles were applied. The patient showed only slight improvement during the next thirty-six hours; 9,000 units, diluted in saline solution, was then given intravenously, followed by no reaction whatever. The pulse dropped from 100 to 60 or 70 over night, and the patient was much brighter the next morning. The membrane was slow in clearing; a smear was positive for Vincent's bacillus, May 30; arsphenamin was applied locally, and the throat cleared in a few days. Slight irregularity of the heart was noted, May 30 and 31. A serum rash appeared, June 2, six days after the first intravenous injection, lasting a week. Moderate palatal paralysis developed, June 6, ten days after admission, clearing up before discharge. The urine showed albumin and casts from May 29 to June 12, afterward clearing. The patient was discharged recovered, June 20.

This was a severe case, marked chill following the first intravenous dose; there was no reaction after the second. Prompt clinical improvement ensued, though the membrane cleared slowly on account of a complicating Vincent's angina. The appearance of nephritis, palatal paralysis and mild myocarditis suggest a longer period ill at home without antitoxin than the parents would admit.

Two severe cases, which terminated fatally, came to necropsy. The sections were performed by Dr. William F. Jacobs, pathologist to the hospital.

CASE 6.—A girl, aged 12½ years, was admitted after two (?) days' illness at home, as a severe case, with an extensive hyaline membrane over both tonsils, uvula, left soft and hard palates and probably in the pharynx, and marked edema on both sides of the neck. Nose and throat cultures were positive for the diphtheria bacillus. Her past history was negative except for measles at the age of 4 years, and convulsions for two days at the age of 5 years. She received 12,000 units intramuscularly shortly before admission, and 12,000 units intramuscularly on admission. She showed no improvement, so 12,000 units was given intravenously, diluted in saline solution, on the following day. A very severe chill followed, with temperature, 105, and pulse, 140.

Ten hours later, a second intravenous injection was given of 12,000 units; no chill followed, and the pulse was stronger. Early the next morning the temperature began to rise, reaching 107 just before death.

There had been anuria since the preceding afternoon. Death occurred thirty-four hours after admission.

Necropsy showed a somewhat flabby and moderately dilated heart, marked congestion of the lungs, some sloughing of the tonsils, and loose tags of membrane of the epiglottis. Microscopic examination showed acute tubular degeneration of the kidneys, scattered hemorrhage and necroses in the liver. In an occasional larger vessel of the spleen and liver the erythrocytes appeared matted, with pigment granules in phagocytic leukocytes and endothelial cells suggesting antemortem agglutination of the erythrocytes. The head was not opened.

The second case is included here because of the intravenous injection of antitoxin, though events proved that it was not diphtheria.

CASE 7.—A boy, aged 5¾ years, was admitted after two days of illness at home, severely toxic, with moderate "bull neck" on both sides, abundant mucopurulent discharge from the nose, and an indefinite membrane over the tonsils and soft palate. The temperature was 104.6; pulse, 128; respiration, 32. The past history was negative except for convulsions at

the age of 1 year and "grip" two and one-half months before entrance to the hospital. On admission, a diagnosis of diphtheria and pneumonia was made. No culture had been taken and no antitoxin administered before admission. On account of the condition of the child, the usual admitting bath was omitted. The child vomited a large amount of fluid. He was given 30,000 units intramuscularly, followed by 9,000 units intravenously. A generalized convulsion and chill developed in twenty minutes, lasting three or four minutes; the temperature rose to 106.9; pulse, 160; respiration, 37. A warm pack was given six hours later, during which the patient perspired profusely and had some muscular spasms, but then rested quietly. Within an hour another general convulsion developed, lasting four minutes, followed by coma, and death in ten minutes. No cultures were taken antemortem, and no urine was secured.

At necropsy, done ten hours postmortem, there was marked swelling of the tonsils and cervical lymph nodes, but no membrane. The thymus was definitely enlarged, as were the mediastinal and mesenteric lymph nodes and the solitary follicles and Peyer's patches of the bowel. The heart was normal. The lungs and kidneys showed congestion, but there was no pneumonia. Microscopic examination showed moderate tubular degeneration in the kidneys, congestion of the lungs with some exudate in the bronchi, and small focal necroses in the liver. In the kidneys, lungs and spleen there were numerous accumulations in the larger vessels of matted erythrocytes, with free and phagocyted pigment granules. Cultures of the nose and tonsils were negative for diphtheria; streptococci were recovered from the latter. The case evidently was one of acute streptococcus tonsillitis and pharyngitis.

It is problematic whether or not the antitoxin given intravenously contributed to the death of these two patients. Unfortunately, none of the serum used is now available for examination. Some work has been done in the past which suggests that occasionally a horse serum is encountered that will agglutinate human corpuscles in vitro. Further experimental work along this line is at present under way and will be reported when completed. Among the other fifty-two cases in this series, no evidence was discovered of similar serious effects resulting from the intravenous injections.

COMMENT

The size of the intravenous dose in the fifty-four cases ranged from 800 units to 15,000 units in a single injection, and up to 24,000 units when divided into two injections. Patients early in the series received smaller doses than later on. The intramuscular dose ranged from 24,000 units to 72,000 units.

The youngest patient to receive antitoxin intravenously was aged 3½ years. This was a very severe case. The total dosage intramuscularly was 66,000 units; intravenously, 9,000 units. The patient died three days later of heart block. The oldest patient was aged 37 years with tracheal membrane; she received 27,000 units intramuscularly and 9,000 units intravenously; she recovered.

Some patients suffered a severe chill, with a sharp rise of temperature and pulse. It is conceivable that in moribund or desperately ill patients this might put a dangerous strain on the cardiovascular system. While recognizing the fact that further work must be done and more experience acquired before we can attain full control over the effects of antitoxin administered intravenously, I believe that, in weighing the patient's chances for life, the advantages to be derived from the immediate availability of ample antitoxin provided by this method are greater than the dangers.

Until further experience teaches us to estimate more accurately the intravenous dosage, it would appear that a combination of this route with the intramuscular offers certain advantages. An intramuscular dose given shortly before the intravenous dose will be absorbed slowly and will provide a supply of antitoxin which will still be entering the circulation when that from the intravenous dose is falling off. It will also prevent any anaphylactic effects from the latter.

Better results following intravenous injections will be observed in severe laryngeal than in severe nasofaucial diphtheria since, in the latter, much irremediable damage will have been done before the antitoxin is given. Only education of the public in the necessity for early recognition and treatment of diphtheria will save these patients.

SUMMARY

Fifty-four patients with laryngeal and nasofaucial diphtheria were given intravenous injections of antitoxin in addition to intramuscular injections. Stock concentrated antitoxin issued by the laboratory of the New York State Department of Health was used. Only cases classed as severe on admission were selected for intravenous administration. The antitoxin was given undiluted or diluted in sterile physiologic sodium chlorid solution.

The indications for an intravenous injection may be thus outlined: It should be given in:

1. Late cases (the patient being ill four days or more without antitoxin) whether moderate or severe in type.
2. Severe and malignant cases, whether discovered early or late in the disease.
3. Laryngeal cases secondary to faucial involvement.
4. "Bull neck" cases and those with hemorrhage.
5. Cases that do not respond to an ample intramuscular dose.

Contraindications are:

1. Cardiac decompensation or severe organic lesion of the heart or blood vessels.
2. Chronic nephritis.
3. Horse serum or protein sensitivity, unless the patient can be successfully desensitized.

The following precautions should be observed:

1. Use only a clear, amber or colorless serum with high titer (1,200 units per cubic centimeter or over). The importance of this must be emphasized.
2. Inject very slowly at body temperature.
3. Stop the injection if untoward symptoms appear.
4. Keep the patient warm, quiet and under close observation afterward.
5. Determine protein sensitivity.

(*a*) If the patient has had no previous serum injections . . . caution; a preliminary intramuscular dose should be given.

(*b*) If the patient has had any serum injections in the past (six days or over) . . . caution; an intradermal test should be performed and the patient desensitized.

(*c*) If the patient has had antitoxin within from four to six days . . . safe; skin tests or preliminary intramuscular doses are not necessary before the intravenous injection.

CONCLUSIONS

1. The careful selection of a proper lot of antitoxin, the observance of certain precautions against allergic shock, and care in the technic of administration renders reasonably safe the injection intravenously of a stock, concentrated diphtheria antitoxin.

2. Some patients with severe and late diphtheria will be saved by this procedure who otherwise would probably have succumbed.

3. Certain complications and sequelae may be prevented; or, if not, will be lessened in severity.

4. A combination of intravenous and intramuscular doses is advantageous.

5. In very severe and late cases, the mortality will continue to be high in spite of this treatment, as serious damage will have been done to the tissues before antitoxin is given.

6. Further experimental work should be done to define more clearly the possible dangers of this procedure.

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INTUBATION IN PRIVATE PRACTICE

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Experience shows that unrecognized or neglected acute inflammatory stenosis of the larynx which both the profession and the laity commonly call membranous croup, causes the death of many children.[1] This is not astonishing, since the average practitioner sees few of these cases during his entire life, and hence he is unfamiliar with their symptomatology and course. He is so accustomed to seeing his patients struggling along for days with the dyspnea of asthma that he feels that even severe air hunger will not kill. He has also seen children, apparently in desperate straits as a result of spasmodic croup, who are playing the next morning, none the worse for the experience. Therefore it is not surprising that he fails to recognize danger in his first case of membranous croup; and that the intubationist, when he arrives, finds a grief stricken family, crushed and prostrated, gathered around the body of the family idol. Many times the disease is never correctly diagnosed, and the physician lives on in utter ignorance of his ghastly error.

ILLUSTRATIVE CASES

Three cases in my own experience will serve to illustrate these conditions:

CASE 1.—A boy, aged 3 years, had been showing croupy symptoms for three days. His mother had had a sore throat the week before. For two nights the boy had not slept, and the night before I was called he had crawled constantly over the bed in intense dyspnea. The young physician in attendance suspected croup and called an older man in consultation. The consultant advised morphin to give rest. Exhaustion and the morphin soon did their work. After a brief period of comparative quiet, the boy collapsed. The attending physician happened to be present, and called me, urging haste. The run was only a few squares. I found the child with purple black lips, pallid face, eyes rolled back and jaws set, unconscious, but still holding to life by an occasional gurgling gasp. Death was a matter of seconds. I did not dare pick him up, but intubated him unrestrained in his crib, as one would practice on a cadaver. Artificial respiration by an open window, with the child inverted, and an injection of epinephrin averted the catastrophe.

CASE 2.—A few nights later I was called to an Italian child with "membranous croup." The attending physician frankly said that he had at first mistaken this for bronchopneumonia. The family was frantically urging him to come, but he felt that he could do nothing more, and that intubation was the only hope. Here again I dared not raise the child. The pupils dilated, and the sphincters and jaws relaxed as I put in the gag. The first time the tube was introduced, it blocked with membrane so that air would not pass into the chest. I pulled it out, removed the membrane, and reintroduced it. Under artificial respiration, air was heard to enter the chest, and the methods I have described were again successful. The throat of this child was covered with a bleeding membrane. The pallor and cyanosis persisted for hours. It was evidently a case of deep diphtheric bronchitis. The baby was plump, and I could not find even the jugular vein. Therefore, I gave him 20,000 units of antitoxin intraperitoneally, and he recovered.

CASE 3.—I was recently called to a neighboring town by a physician who is familiar with croup. Another physician had made a diagnosis of pneumonia, but a friend of the family, whose child I had intubated a year before, recognized the disease and insisted on a consultation with his physician. Had it not been for this accidental lay diagnosis, this little boy would have been sacrificed.

VALUE OF EPINEPHRIN

One point that should be emphasized is that while delays are most regrettable and increase the death rate, it is never too late to perform an intubation, as the majority of children recover even when artificial respiration is necessary to resuscitate them. Epinephrin is of great value in these cases. When the child is apparently dead, it should be injected directly into the heart;[2] if the heart is still beating, it may be used subcutaneously.

NEED OF TRAINING STUDENTS IN CONTAGIOUS DISEASES

Errors in diagnosis and ignorance of the course of this and other contagious diseases should not be laid at the door of the practitioner. The blame belongs to the medical schools, as many have no hospital for teaching the diagnosis, course and treatment of contagious diseases. Until such facilities are available, the students cannot be properly trained, public health must suffer, and the babies will be sacrificed. No school should be given an "A" rating until it has provided proper clinical instruction in contagious diseases.

DIAGNOSIS

One type of acute inflammatory stenosis of the larynx in children may be caused by infections that are accompanied by the production of a pseudomembrane. This, aided by the accumulation of mucus behind it, mechanically obstructs the lumen of the larynx. Most cases of croup with membrane are diphtheric. In the other type, no membrane is formed. The stenosis is caused primarily by an inflammatory swelling of the larynx and is aggravated by an accumulation of mucopurulent material which gathers in the trachea back of the obstruction. This type of acute stenotic laryngitis is usually a complication of measles, whooping cough, scarlet fever or influenza.

Clinically, the symptomatology of the two types is identical. The dyspnea is terrific. At its height, every intercostal interspace is retracted during the strident inspirations, the supraclavicular and infraclavicular spaces sink in, and in some infants the lower end of the sternum caves in until it buckles with each inspiratory effort. The muscular exertion is as great as that of a pugilist in combat. The child crawls over the bed and sometimes thrusts its hand down its throat in futile efforts to remove the obstruction. Soon the

1. Hogan, J. F.: Laryngeal Diphtheria, J. A. M. A. 77: 662 (Aug. 27) 1921.

2. The Intracardiac Injection of Epinephrin, editorial, J. A. M. A. 80: 1314 (May 5) 1923.

patient is exhausted. The respirations become short, frequent and shallow. The face grows pale and the lips become cyanotic. The child lies quiet. This period is of short duration and is followed by gasping breaths at irregular intervals until the last inspiratory effort is made, and all is over. When the child becomes quiet, the parents and the inexperienced physician often feel that the crisis is past; but, *in croup, a cyanotic, quiet child is a dying child.*

The only way of distinguishing between the membranous and nonmembranous forms is by direct laryngoscopic examination. This distinction is of great importance in hospitals where it is so necessary to prevent mixed infections gaining entrance to the diphtheria ward; but in private practice it is of less importance, because it is safer to treat every case of acute stenotic laryngitis as though it were diphtheric. Every case of croup that accompanies or follows a sore throat, with or without spots on it, must be regarded as dangerous. Every case that does not clear up with the break of day, whether the throat is sore or not, should be treated as diphtheric. Finally, when a child is strangling, from an unknown cause, it should not be permitted to suffocate merely because the disease has not been named.

The differential diagnosis between acute inflammatory stenosis of the larynx and other diseases is not difficult. Spasmodic croup comes on suddenly; stenotic croup, gradually. In the intervals between paroxysms, stenotic croup does not let up entirely, while spasmodic croup usually does. Emetics nearly always relieve spasmodic croup, while in the stenotic form, if there is any relief, it is of short duration. Spasmodic croup often attacks on two or three successive nights, the child being free from symptoms during the day. Stenotic croup, on the contrary, increases gradually up to a certain point, and then progresses rapidly. Children over 5 years of age seldom have spasmodic croup; stenotic croup may occur up to 14 years of age; and, on rare occasions, it may be seen in adults. A swab examination at the laboratory will be of great assistance in the diphtheric cases, but vigilance should not be relaxed because of a negative finding. It must be remembered that in many cases the result of the first culture is negative, while later cultures show the presence of the diphtheria bacilli; and also that nondiphtheric conditions give rise to fatal inflammatory stenosis of the larynx either with or without membrane.

Acute laryngeal stenosis is often mistaken for pneumonia. The croupy, strident cough, the voice that sounds like a muted musical instrument, and the dyspnea raised to the "nth power" should not permit one to overlook the stenosis, even in cases complicated by pneumonia.

An enlarged thymus may suddenly cause symptoms like those of membranous croup. Such cases are rare, but the indications for operation are the same as in croup, and, if promptly intubated, the child may be tided over until the disease is recognized and roentgen-ray treatment commenced.

After a physician has made a diagnosis of stenotic croup, he should always try to ascertain whether or not some primary disease is responsible for the condition. During the course of influenza attacks, I have seen several cases of acute stenotic croup with negative cultures. I have also seen this form of croup in the various stages of scarlet fever. Diphtheria bacilli and membrane have been found in all of these cases. Another cause of acute stenosis of the larynx is measles, in which the obstruction may arise prior to the appearance of the rash, during its height, or just after it has disappeared. In some of these cases, it is caused by a complicating diphtheria, while in others, diphtheria plays no part. Membrane may or may not be present. Morris [3] and Ponce de Leon [4] report a series of such cases. I have found no records of nondiphtheric stenotic croup in whooping cough in the literature, but I have seen it as a complication in the early stages. True diphtheric croup, however, may occur as a coincident infection at any period of this disease.

Stenotic croup, especially the diphtheric variety, is essentially a disease of poverty and bad hygiene.[5] Most of my cases have been among the poorer laboring classes, the foreign element and the tenant farmers whose habits of life are very primitive. There was but one colored child in the series. Although Wright [6] calls attention to the fact that adult negroes possess about the same degree of immunity to diphtheria as do white persons, Cartin [7] and Hoyne [8] have reported the comparative rarity of this disease in the negro race.

Only four patients in this series had the benefit of professional nursing.

OBSERVATIONS IN PRACTICE

The deaths in the clinically diphtheric cases were due to acute toxemia in two cases, these children living only a few hours after intubation. Acute cardiac paralyis killed one child ten days after extubation. One child died twelve hours after intubation as a result of sudden obstruction of the tube by membrane. One child died from a complicating pneumonia.

Intubation in Private Practice—Acute Infectious Stenosis

	Recovered	Died	Total
Clinically diphtheric group*	110	5	115
Whooping cough with stenosis, culture positive for diphtheria	2	1	3
Measles with stenosis, negative culture	1	1	2
Measles with stenosis, positive culture	1	0	1
Scarlet fever, stenosis, positive culture	0	2	2
Influenza, stenosis, negative culture	3	0	3
NONINFECTIOUS CASES			
Enlarged thymus	1	0	1
Stenosis following removal of foreign body from lung by bronchoscopy (case of Dr. Charles Bowen)	1	0	1

* The culture records for this group are not complete. The majority were positive cases.

The child with measles, aged 13 months, died six days after intubation, seventeen hours after the removal of the tube. This death was apparently due to exhaustion, as the child never rallied properly after intubation, and took almost no nourishment. There was no pneumonia. The measles eruption was at its height when the operation was done.

The baby with whooping cough and diphtheria was 1 year old, bottle fed, and marasmic. It died of pneumonia seventy-two hours after intubation.

The two fatalities from coincident scarlet fever and diphtheric stenosis occurred in one family, in which three children developed laryngeal stenosis during the

3. Morris, M. F., Jr.: Laryngeal Stenosis as a Complication of Measles, New York M. J. **104**: 1125 (Dec. 15) 1917.
4. De Leon, Ponce: Measles and Diphtheria, Arch. Espan. de Ped. **4**: 663, 1920.
5. Reiche, F.: Scharlach und Diphtherie in ihren Beziehungen zur sozialen Lage, Berl. klin. Wchnschr. **52**: 643, 1915.
6. Wright, L. T.: The Schick Test, with Especial Reference to the Negro, J. Infect. Dis. **21**: 265 (Sept.) 1917.
7. Cartin, H. J.: Intubation of the Larynx: An Analysis of Four Hundred and Forty Cases in Private Practice, Tr. Sect. Dis. Child. A. M. A., 1920, p. 109.
8. Hoyne, A. L.: A Study on Diphtheria Mortality, with Comments on Treatment, Arch. Pediat. **35**: 513 (Sept.) 1918.

course of scarlet fever. One was dead when I arrived at the house, and both of the others died during the night after they were intubated. These children had been ill with scarlet fever about two weeks, and had severe cervical adenitis when the diphtheric membrane suddenly appeared. The physician in attendance thought this was a recrudescence of scarlet fever; but, when laryngeal symptoms developed, cultures showed diphtheria bacilli. Cultures had been taken for diagnostic purposes early in the course of the scarlet fever, but they were negative.

In addition to the operative cases reported in the accompanying table, I saw within the same period eight cases in which recovery occurred without operation. One of these patients, an adult, had a positive culture.

Among the cases covered by this report, four children who seemed to be dead were resuscitated, but in eleven cases, not included in the table, our efforts were unsuccessful. When a child who has been dyspneic for hours has stopped breathing for more than a few seconds, artificial respiration, epinephrin and other restorative measures usually fail. On the other hand, sudden suffocation following the expulsion of a tube, or its obstruction by loose membrane, is less dangerous. We have seen these children resuscitated after incredibly long periods. The reestablishment of respiration is accompanied by a convulsion.

Two children in the "clinically diphtheric" group were tracheotomized. They had been reintubated many times; then they began to cough out the tube repeatedly, even after a larger sized tube had been substituted. This we regard as a symptom of laryngeal ulceration.[9] In one of these cases, Dr. McClelland of Xenia performed the tracheotomy. Here the culture was negative, and almost complete cicatricial stenosis of the larynx followed. It is now thirteen years since this tube was inserted, but the patient is still wearing the cannula, although various specialists have attempted to dilate the stricture. It is interesting to note that four years after she was operated on, this child went through a typical course of whooping cough, with its characteristic paroxysms of cough, ending in the peculiar inspiration. This would suggest that spasm of the larynx is not the cause of the attack and whoop.

The other tracheotomy was performed by Dr. André Crotti of Columbus, on a boy, aged 14 months, who had worn a tube for five weeks. The culture in this case was positive. It took almost a year to get rid of the cannula, but the patient made a perfect recovery.

It is difficult to ascertain the mortality after intubation in private practice, as few reports have been published. Cartin reports 440 cases, with no tracheotomies, no chronic tube cases, and a mortality of about 14 per cent. Sheffield[10] had sixty-four cases with but one death, and Rosenthal,[11] 100 cases with twenty-five deaths. It would seem that the mortality is lower than is usually the case in hospital practice.

This difference is probably due to the difficulty of preventing crossed respiratory infections, and to the occasional outbreaks of other contagious diseases, which it is almost impossible to avoid when many sick children are gathered together. A common source of such infections is found in the cases of measles, scarlet fever, influenza and whooping cough, which begin with symptoms resembling laryngeal diphtheria, but which are really cases of stenosis without membrane.

Introduction of measles into a diphtheria ward is particularly dangerous. More than twenty-three years ago, while an intern in the Municipal Hospital of Philadelphia, I experienced one such epidemic, with its hemorrhagic cases, bronchopneumonia and sequels of noma and cancrum oris.

METHOD OF TREATMENT

The indications for intubation are cyanosis, increasing restlessness, inability to sleep and marked dyspnea. Excepting in cases in which the child is moribund, the operation is performed in the upright position, with the child wrapped in a mummy-restraining bandage, and held by an assistant. When the child is too far gone to struggle, and its attempts to breathe are separated by irregular intervals, it is intubated in its bed, and no time is taken to pick it up.

Mucopurulent material and serous fluid often accumulate behind the laryngeal obstruction. Just as soon as the tube is introduced, the child is inverted to facilitate drainage of this material. The foot of the bed is raised so that the child's head will be several inches lower than its feet. No pillow is permitted. The headboard is padded to prevent the patient bumping his head. The child is kept in this position until the tube is removed. Swallowing provokes less violent paroxysms of coughing if neither water nor food is given until two hours after intubation, because this gives time for the larynx to become accustomed to the tube. I believe that this lessens the danger of pneumonia. When food or water is given, the child's body is kept in the same position, but its head is turned on one side. Only a teaspoonful is given at a time. Some children who cough less if fed in the sitting position are allowed to sit up while being fed.

During the first twenty-four hours, ice cream is the only food permitted. It is cooling, easily swallowed, and children will take it when nothing else tempts them. When there is much fever, cracked ice is given instead of water. As the condition improves, milk toast, soft-boiled eggs and other soft foods are given.

Excessive fever is controlled by sponging the face and hands. The bowels are regulated by enemas and suppositories. The best ventilation that can be devised under the conditions found in the home is insisted on. When artificial heat is used, some arrangement is made, such as pans of water on the stove, to keep the air moist.

Very few of my patients have had a single dose of medicine by mouth. Entire reliance is placed on antitoxin. When this has not been given before I arrive, it is administered intravenously, if possible; but if a vein cannot be reached, the subcutaneous route is used in all but desperate cases, in which cases I give it intraperitoneally, using the same dosage that I would employ intravenously. The results have been very gratifying.

The entire amount of antitoxin considered necessary for the patient should be injected immediately. Unfortunately, many physicians still cling to the antiquated method of dividing the antitoxin into several doses, which are given at intervals of from twelve to twenty-four hours. This procedure is scientifically untenable. In laryngeal stenosis without membrane in the throat or nose, I give 5,000 units intravenously, or 10,000 units subcutaneously. With throat involvement I give

9. Hohlfeld, M.: Experiences with Intubation in Diphtheria, Jahrb. f. Kinderh. **91**: 240, 1920. Hermann, E.: Intubation for Diphtheria in Infants, Jahrb. f. Kinderh. **92**: 273, 1920.
10. Sheffield, H. B.: Intubation in Laryngeal Diphtheria (Notes on Sixty-Four Cases), M. Rec. **92**: 1068 (Dec. 22) 1917.
11. Rosenthal, E.: Diphtheria of the Larynx, Ann. Gynec. & Pediat. **16**: 397, 1903.

10,000 units intravenously, or from 20,000 to 30,000 units subcutaneously. When nose, throat and larynx are involved, I give from 20,000 to 30,000 units intravenously, or from 40,000 to 60,000 units subcutaneously.

About five out of every six cases of stenotic croup are diphtheric; and since the successful treatment of diphtheria depends on the prompt administration of antitoxin, and since the nonspecific action of antitoxin seems to be beneficial in the nondiphtheric cases, lives will be saved if antitoxin is given immediately, without waiting to make an exact diagnosis.

All of my work has been done with the O'Dwyer instruments. I have not used the direct method of intubation,[12] nor have I employed suction, as advised by Litchfield and Hardman,[13] or the removal of loose exudate from the larynx with an applicator, as done by Thomson.[14] The latter procedure seems sound, and as it is feasible in private practice, I expect to try it in suitable cases in the future.

Extubation is done on the fifth or sixth day. During this operation, the extractor is introduced in the usual manner; but, as soon as the tube is engaged, the child's head is rocked back on the shoulder of the person holding the child, by the assistant who holds the gag, until the head is in the position for direct laryngoscopy. The tube is then lifted straight out of the larynx, and the raking of the posterior wall of the trachea, as the tube makes the usual curve, is avoided. Since the adoption of this technic, the number of reintubations has decreased. After removal of the tube, the intubationist should watch the child for several hours.

When a child with nondiphtheric stenosis requires a reintubation, an autogenous vaccine is prepared from a laryngeal culture planted on an agar slope. This is injected as soon as possible, and the dose is repeated in twenty-four hours. After an interval of five days, the tube is again removed. In five cases treated in this way the temperature at once fell and reintubation was not required. Nondiphtheric cases have formed a large proportion of my "prolonged intubations." [15]

Almost all patients with laryngeal diphtheria give a history of having had a sore throat about a week before, or else of having been exposed to sore throat in some other member of the family. If the general practitioner will treat every suspicious case of sore throat with antitoxin, without waiting for a cultural diagnosis, and then will take his culture, and, if this is positive, immunize all children in the family, the number of laryngeal cases will be greatly reduced. However, if the family physician has attended these cases and has diagnosed and treated them as tonsillitis, without the use of antitoxin, and without taking advantage of the laboratory for exact diagnosis, he should consider his carelessness responsible for cases of membranous croup which develop later. The Schick test gives the practitioner a method of detecting the children among his clientele who are susceptible to diphtheria. If he will permanently immunize these children with the toxin-antitoxin mixture, he can feel that it is not due to his neglect if they later develop an acute laryngeal stenosis.[16]

12. Purcell, C. E.: Direct Intubation in Neglected and Desperate Cases of Tracheal and Bronchial Diphtheria, South. M. J. **16**: 301 (April) 1923.
13. Litchfield, H. R., and Hardman, R. P.: Suction in the Treatment of Laryngeal Diphtheria, J. A. M. A. **80**: 524 (Feb. 24) 1923.
14. Thomson, C. A.: Removal of Diphtheritic Exudate from the Larynx: Employment of an Applicator for the Purpose of Avoiding Intubation, J. A. M. A. **78**: 1198 (April 22) 1922.
15. Thomson, C. A.: Acute Stenotic Laryngitis Simulating Laryngeal Diphtheria, J. A. M. A. **78**: 1456 (May 13) 1922.
16. Park, W. H.: Toxin-Antitoxin Immunization Against Diphtheria, J. A. M. A. **79**: 1584 (Nov. 4) 1922.

OSTEOMYELITIS VARIOLOSA *

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AND
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That clinical bone complications during or as a sequel to smallpox is a comparatively rare condition is indicated by a reasonably fair search of the literature, as well as personal inquiries from isolation hospitals. At El Paso, where 390 cases have been treated in the last eight years, there is no history or record of osteomyelitis as a complication or sequel. Councilman [1] states that he has never seen a case of osteomyelitis as a complication of smallpox. Ingelrans and Taconnet,[2] in 500 cases of smallpox, noted osseous lesions consecutive to the infection three times. The evidence seems conclusive that there are two distinct forms of osteomyelitis occurring as complications of smallpox. The ordinary metastatic pyogenic osteomyelitis is the more frequent variety, as indicated by Neve,[3] Bidder,[4] Mauclaire,[5] Paré,[6] Debeyre,[7] Schwenk,[8] Kolaczek [9] and others. That it does not occur more frequently as a complication of smallpox in a disease so universally accompanied by pus is somewhat surprising. Our object in this paper is to call attention to what appears to be an entirely different pathologic process complicating smallpox, and one which the present evidence would indicate was due to the specific virus of variola.

Chiari,[10] Mallory [11] and MacCallum [12] report microscopic lesions consisting of small nodules in the substance of the testes which is entirely characteristic of smallpox. Chiari and Mallory both report identical necrotic areas in the bone marrow at necropsy in patients dying in the active stages of smallpox. Chiari made laboratory studies on the bones in twenty-two necropsies on the bodies of patients who had died during the three different stages of smallpox, and Mallory's conclusions were based on laboratory study of the bones of three patients dying during the suppurative stage.

Chiari concludes after the laboratory studies of twenty-two postmortem cases that the microscopic findings in the bone marrow of variola cases show that in the disseminated foci we have before us a pathologic process in the bone marrow caused by the variola and itself bearing a variolar character; that this osteomyelitis variolosa is to be found in all stages of the disease, and that the foci in the bone marrow never show suppuration. It is also his opinion that these disseminated foci of variola in the bone marrow may explain

* Read before the Section on Orthopedic Surgery at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Councilman, W. T.: Smallpox, in Osler's Modern Medicine **1**: 790.
2. Ingelrans and Taconnet: Ostéopériostites post-varioliques, Echo méd. du nord. **7**: 176, 1903.
3. Neve, Arthur: Cases of Bone Disease After Smallpox in Young Children, Lancet **2**: 609, 1887.
4. Bidder, A.: Zur Kenntniss der eitrigen Gelenkentzündungen bei Variola, Deutsch. Ztschr. f. Chir. **11**: 453, 1873.
5. Mauclaire: Maladies des os, p. 94.
6. Paré: Osteomyelitis and Smallpox, Oeuvres Complètes **3**: 258.
7. Debeyre, A.: Ostéomyélities postvarioliques, Echo méd. du nord. **7**: 182, 1903.
8. Schwenk: Symmetrische Osteomyelitis nach Variola, Arch. f. Kinderh. **58**: 12-29, 1912.
9. Kolaczek published a book on symmetrical osteomyelitis variolosa observed in 1874 at the Breslau surgical clinic; the first and only case reported in literature up to 1912 (Deutsch. med. Wchnschr., 1878).
10. Chiari, H.: Ueber Osteomyelitis variolosa, Beitr. z. path. Anat. u. z. allg. Path. **13**: 13-31, 1893.
11. Mallory, F. B.: Ueber die Verbreitung der Osteomyelitis variolosa in Knochensysteme, Ztschr. f. Heilk. **15**: 235-254, 1894.
12. MacCallum: Text Book of Pathology, Ed. 2, p. 763.

the frequent bone pains of which variola patients complain.

He had opportunity to study the pathologic process in one case two months after variola. His study of that case gives very good presumptive evidence as to the pathologic process that occurs in the clinically manifested osteomyelitis due strictly to the virus of variola. He found the marrow of the femur lymphatic and hyperemic. That in the isolated nodular pale foci contraction of necrotic tissue had set in. The obliterated structure of the bone marrow was replaced by fine and coarse granular detritus representing a resorption process in necrotic foci and resembling the healing stage of orchitis variola.

Mallory states that in variola the marrow from various bones shows more or less numerous circumscribed, typical inflammatory foci associated with central necrosis, and that osteomyelitis variolosa is extended throughout the osseous system.

In 1903, Debeyre observed that cases of osteomyelitis complicating smallpox more commonly ended without suppuration.

In 1910, Musgrave and Sison [13] reported with photographs six cases of great deformities of the joints of the arm and legs following smallpox, showing to what great extent destruction and deformity might occur without suppuration.

Again in 1913 they [14] reported twelve more cases, submitting roentgenograms to show the extensive destruction in the epiphyseal ends of the long bones often involving the joints, these patients having shown no evidence of suppuration.

In 1912, Cange [15] reported three cases of symmetrical deformities of the forearms and hands due to smallpox.

In 1922, Sheldon [16] reported two cases of great deformity, one of the elbow and forearm and the other of the tibia and fibula, involving the ankle joint.

Musgrave's and Sison's eighteen cases were in Filipinos. Sheldon's two cases were in Chinese, and one of our cases was in an American and one in a Mexican.

REPORT OF CASES

Case 1.—An American girl, aged 6, whose face was covered with smallpox scars, had had smallpox when 3 years old. She was seriously ill. The family was then living in Mexico. She was in bed for three months. During the last six weeks of her illness her arms and legs were so sore that she could not be moved. It was thought that she had rheumatism. She had one small abscess on the inner side of the left tibia just above the ankle joint, which was opened on two or three occasions and healed after the bone was scraped. From the time of that illness, three years, she had been gradually developing deformities of the forearms and wrists.

The left wrist showed that the ulna was considerably longer than the radius, angling the hand sharply toward the radial side. The roentgenogram showed a destruction of the epiphyseal line of the lower end of the radius with a deformed but preserved epiphysis, with exostoses projecting from the diaphysis. There was a light area in the lower end of the ulna, apparently an old necrosed area. The upper epiphyseal lines of the ulna and radius did not seem to be destroyed.

The whole right forearm was shorter than the left. The right radius was 1 cm. shorter than the left. The right ulna was almost 3 cm. shorter than the left. Both lower epiphyseal lines were destroyed, and there was evidence of destruction of the upper epiphyseal line in the radius. The radius was somewhat bowed. The lower epiphysis of the radius was present, but deformed. There was some exostosis of the lower end of the diaphysis.

In the left leg there was evidence of an old necrotic area in the lower outer aspect of the tibia. There was a light necrotic area in the fibula, 5 cm. above the lower tip. The right clavicle was 2 cm. shorter than the left, and it showed a smaller irregular outer end as compared with the left.

This case shows destruction of five epiphyseal lines without suppuration in any. It shows what is probably a necrotic area in the lower end of the left ulna and lower end of the left fibula, which did not suppurate, and one focus in the lower end of the left tibia not involving the epiphyseal line, which did suppurate, making eight foci of metastatic infection with but one suppurating.

Case 2.—A man, aged 20, a Mexican, born and reared in the interior of Mexico, was so young when he had smallpox that he did not remember having had it. His face was badly pitted from smallpox. He had the characteristic shortening of the right forearm, with overgrowth of the ulna in length as compared with the radius, causing some angulation toward the radial side. The wrist joint was free, and it was a strong, useful hand, with which he did ordinary work. Both bones in the right forearm were much shorter than the normal left. The right radius was only 15 cm. long, while the left was 27. The right ulna was 22 cm. in length; the left, 27.

The lower end of the right radius was fused with the ulna 1.5 cm. above its lower end. The right ulna was 1.5 cm. longer than the right radius. The epiphysis of the right wrist joint was preserved, and fused with the diaphysis of the radius. There were no exostoses. Supination and pronation were very limited. There was absolutely no evidence in the way of scars that there was any suppuration.

CONCLUSIONS

From the foregoing evidence, it appears that there are two distinct forms of osteomyelitis complicating or as a sequel to smallpox:

First, the ordinary pyogenic metastatic osteomyelitis that occurs in other infectious diseases, and second, a distinct form of necrosing nonsuppurating osteomyelitis probably due to the specific virus of smallpox, which frequently involves the diaphyseal ends of the long bones, destroying the epiphyseal lines and causing late deformities.

The specific form of variolar osteomyelitis most frequently occurs in children. It is not recognized during the acute clinical stage as osteomyelitis, and the deformities are often overlooked because their evolution is gradual and the patient has often left the care of the physician before deformity occurs.

ABSTRACT OF DISCUSSION

Dr. F. B. Sheldon, Fresno, Calif.: Dr. Brown has contributed something to the history of this lesion, in that he has seen the early lesions in the child. I can report five cases of this disease.

Dr. W. L. Brown, El Paso, Texas: The pathology of the bone lesions of smallpox during the active stages of the disease, the pathology in Mallory's case examined two months after the disease, my case, in which the bone lesions developed during the sixth week of smallpox, and the observation of the case two years or more later make me feel that there can be little ground for disputing the connection between the disease and its specific joint lesions. In my first case, with eight foci of infection, only one suppurated. This one undoubtedly was an ordinary pyogenic metastatic osteomyelitis. I know of no pathogenic micro-organism that causes this sort of disturbance, destroying the epiphyseal line and not causing suppuration; nor do I know of any inflammation attacking the epiphysis primarily, except osteochondritis of the hip, or Perthes' disease. Therefore, by connecting

13. Musgrave and Sison: The Bone Lesions of Smallpox, Philippine J. Sc., December, 1910.
14. Musgrave and Sison: The Bone Lesions of Smallpox, Philippine J. Sc., April, 1913.
15. Cange, A.: Un syndrome ostéomyélitique post-variolique, Prov. méd. 23: 573-577, 1912.
16. Sheldon, F. B.: The Bone Lesions of Smallpox with Report of Cases, read before the American Roentgen Ray Society, 1922.

the early pathology with Musgrave and Sison's cases, the case of Dr. Sheldon and my own, I have painted a reasonably fair picture of a clinical entity due to the specific virus of smallpox.

PERINEAL AND SUPRAPUBIC PROSTATECTOMY

CHOICE OF OPERATION IN TYPES OF CASES *

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LOS ANGELES

Since Goodfellow, in 1893, performed the first perineal prostatectomy, and Freyer, in 1900, the first subtotal enucleation suprapubically, progress has been rapid and constant, until at present both operations may, in the majority of cases, be completely visualized and, in a large measure, ordinary surgical principles may be observed. One difficulty after another has been surmounted. Preparation, the most important factor of all, is now among urologists universally the great desideratum. Technic and management have been so perfected in both types of approach that, in experienced hands, the incidence of mortality and morbidity should be very low. When Young, in 1903, modified and perfected the Proust operation, he builded so well that the various modifications (Hinman, Geraghty, Dillon, Cecil, as well as modifications suggested by Young himself) have added little of real value to the original procedure.

For more than fifteen years there has been scarcely any urologic meeting at which there has not been heated controversy as to which approach—perineal or suprapubic—constitutes the better method of prostatectomy. Some could see no merit in the perineal operation; others used it almost exclusively. One advocated the perineal route for fibrous prostates and the suprapubic for large middle lobes. Some preferred the perineal for the hypertrophied prostate that in its growth remained within its anatomic limits and did not push into the bladder. Another advocated the low operation in fat patients, and then again some one else warned us against this route in the very same class of patient. As a matter of fact, there seems to have been not sufficient logic or reasons based on clinical experience to bring about a reasonable degree of agreement. After all, almost any prostate may be attacked with reasonable certainty of good results by either method, provided the operator is skilled and experienced in the particular type of operation he is doing. I have studied the question from several angles, and my purpose here is to advocate the selection of one or the other type of operation after thorough study of a given case along lines that appear saner to me than those heretofore promulgated.

The low mortality rate of Young has never been quite approached by any other operator. The average mortality rate by the perineal route in the hands of the foremost operators has been about 4 per cent.[1] The incidence of morbidity, however, has been somewhat greater. The shortcomings of the perineal operation are: (*a*) incomplete removal; (*b*) various degrees of incontinence following; (*c*) decrease or loss of sexual power, and (*d*) recto-urethral fistula—rarely seen except after operation by the inexperienced.

Incomplete removal is often followed by residual urine and occasionally by a certain degree of incontinence. Incontinence is more likely to follow one of the newer procedures—enucleation *en masse*, even though the external sphincter is not injured. There can be no question that the sexual power of the patient is very often markedly lessened or destroyed by this type of approach. This has been attributed to injury of the periprostatic nerve plexus and is also probably due at times to injury of nerves in the perineum. One is inclined to dismiss this factor as unimportant; but the loss of all sexual desire frequently has a profound psychic effect on men around 60 or 65 years of age. Recto-urethral fistula can almost always be avoided. Admittedly and, in fact, all the bad results mentioned do occur with even the most skilful and experienced operators.

Suprapubic prostatectomy, either by the two-stage operation or the one-stage open visualized operation, after the method first suggested by Hurry Fenwick, improved and perfected by Chute, Judd and Hunt, in which bleeding vessels at the bladder neck are whipped over and tied, followed or not by the use of a hemostatic bag, in properly selected cases, affords practically as low a mortality as the perineal operation, and the functional and structural results are not left to a certain chance as they are in the perineal. Incontinence is unknown after a proper suprapubic enucleation, and the gland can be readily enucleated more radically, enabling the bladder to empty itself completely. Sexual function is never affected adversely.

Many operators (Gardner, Hunt, Bugbee, Lower, MacKenzie and others) have reported a large series with a mortality rate of from 2 to 2.5 per cent. In fact, with good fortune, Gardner and Lower had more than 100 consecutive cases without a death, and Hunt and Judd over 100 with one death, using sacral and perisacral anesthesia and field block for the abdomen. Freyer had an operative mortality of 5.25 per cent. in his series of 1,625 cases, and most of these at a period when accurate methods of determining kidney function and retained nitrogen were unknown. When we consider this low mortality, however, by either type of operation, we must believe that these cases were largely among the better risks—well-to-do patients for the most part, who did not allow the prostatism to advance to the ultimate. Probably Chute's recently reported mortality rate of 10 or 11 per cent. is more nearly the correct one for patients operated on in general hospitals supported by taxpayers, to which patients so often go only as a last resort. These patients often present themselves to these hospitals in the late stages, after the kidneys, heart and other organs have suffered the most marked degeneration from retention, backpressure and long existing infection.

Studying the statistics of many operators, either published or learned by personal communication, one must arrive at the conclusion that perineal prostatectomy has a slightly less mortality rate than suprapubic, when each is performed in the most skilful manner after the most careful preparation.

From 15 to 35 per cent. of prostatic patients coming to operation—the percentage in a given series varying with social status, financial state and degree of intelligence—constitutes the class in which we may expect to harvest our mortality. These come with all sorts of lesions and degenerations in heart, kidneys, arteries, lungs and other important organs, and any ill wind may carry them off. In fact, if they survive prosta-

* Read before the Section on Urology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Young, H. H.: Surg., Gynec. & Obst. 36: 589 (May) 1923.

tectomy, their expectancy of life is not more than from one to three years. On the other hand, the remaining 65 per cent. or more are excellent risks and, if carefully prepared, have good surgery and are wisely managed postoperatively, should recover almost to a man, no matter what type of operation is performed.

Recently we have been segregating our cases as follows:

The good risk we have subjected to suprapubic operation, either one-stage with bladder neck suture plus hemostatic bag or packing, or the two-stage operation if the catheter is not well tolerated or the urine is persistently ammoniacal from infection with urea-splitting organisms, or stone is present. Packing the bladder after the manner of Freyer following the two-stage operation is occasionally resorted to and is entirely dependable to control bleeding. It is productive, however, of much tenesmus.

With the poor risk, on the other hand, we have recently decided, in most cases, to operate by the perineal route. With caudal and transsacral anesthesia, or even with gas, it allows these patients to get about very soon, and this is an important factor in many of these decrepit old men, who develop pulmonary, cardiac and renal embarrassment most readily.

Limited time does not allow me to discuss in detail the well established methods of management from the moment the patient is first seen until he is fully convalesced. Here again, to the genius of Dr. Young[1] we owe the greatest share of our advancement.

The opinions here stated are based on more than 200 prostatectomies that I have performed, about 20 per cent. of which were done perineally. There has been no death among the perineal cases since the days of phenolsulphonephthalein. In private practice my mortality rate after suprapubic prostatectomy has been 4.3 per cent., and this notwithstanding that until recently all the bad risks were operated on suprapubically in two stages.

CONCLUSIONS

1. Sixty-five per cent. or more of prostatic patients requiring prostatectomy are good risks and have a reasonable expectancy of life for from four to twenty years.

2. The operative mortality rate in this selected class of cases should not be more than 1 per cent. from either type of operation.

3. The choice of anesthetic is a great factor. The mortality has shown a considerable drop with the introduction and use of caudal and transsacral or gas anesthesia for perineal operations, and caudal and transsacral plus field block in suprapubic operations or the use of spinal anesthesia.

4. From 15 to 35 per cent. of any given series are poor risks, and the mortality rate is probably at least twice as great in these cases with the suprapubic route as it is perineally. These patients have a reasonable expectancy of not more than from one to three years at best, and should be satisfied to take the chance of an occasional bad functional result.

5. On the other hand, the younger and sounder man with a reasonable expectancy of a considerable number of years to live and vitality sufficient to withstand a more radical and precise suprapubic enucleation, with sure preservation of sphincter control, no diminution of sexual power and no risk of having a urethrorectal fistula, I believe should have the suprapubic operation in all cases. Bad results after suprapubic operations should not occur; but if they do occur, they are easily corrected. Most bad results after perineal operations are irremediable.

ABSTRACT OF DISCUSSION

DR. HOMER G. HAMER, Indianapolis: Dr. Wishard of Indianapolis did a median perineal prostatectomy in 1891. The following year he read a paper on perineal operations on the prostate, and reported a new method of removing the lateral lobes. Wishard's work on prostatic surgery up to within a few years was done virtually all by perineal route, and there are 350 or 400 cases to his credit with good results. It has been my fortune to observe many of those cases. So far as I know, there were no cases of ureterorectal fistula; no cases of permanent perineal fistula and no cases of lack of control, but commonly there was dribbling of urine for a short time after operation. Our method of operating on the hypertrophied prostate has changed about from the perineal to the suprapubic method of approach, as has been general over the country, and we find that while the functional results are not much better, the management of the patients is very much easier in the hospital. The work of after-care is greatly simplified, according to my personal observation of the two methods of operation. In a recent report of our own work, covering two years, in 123 cases, there was a mortality of only 1⅝ per cent. This represents the cases of prostatic hypertrophy, excluding malignancy. In the entire group observed in that period the malignancy approached approximately 20 per cent.

DR. R. L. RIGDON, San Francisco: We should approach the subject with open minds and use that method of operation which will give the best results. Some will perhaps resort to the suprapubic route more frequently than others, but we ought not to reject the perineal route. On the other hand, the man who is doing most of his work through the perineal route should not reject the suprapubic route entirely. If we do, we are not doing the best we can for our patients.

THE ROENTGEN RAY VERSUS VACCINES IN THE TREATMENT OF ACNE*

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Acne vulgaris can hardly be considered a disease of great importance in the majority of cases. At times, however, it is severe enough to present a problem that is worthy of serious attention, affecting not only the peace of mind but even the earning capacity of its victim. In the treatment of this rather stubborn disease, both the roentgen ray and vaccines have been, and still are, rather widely used. With the object of comparing the therapeutic value of these two remedies, this paper has been written.

Without discussing the pathology of acne at length, it should be recalled that the essential process in this disease is a functional overactivity of the sebaceous glands, combined with a follicular hyperkeratosis. To this is frequently added more or less pustulation, and, at times, deep seated granulomatous infiltration. The therapeutic indication is to inhibit the overactivity of cells of the sebaceous glands and follicular openings. The roentgen ray is an agent that should theoretically be able to accomplish this result, owing to its inhibitory action on the reproduction of certain types of cells. That it does so in practice is a fact I shall try to substantiate.

* Read before the Section on Dermatology and Syphilology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

ROENTGEN THERAPY

The roentgen ray has now been used in the treatment of acne for twenty-six years. Most of the unfortunate results formerly obtained from its use were due to inability properly to measure the dosage. The indirect (electrical) method of measurement which antedates the use of pastilles was uncertain with the earlier available apparatus. The use of pastilles (of barium platinocyanid) made it possible to measure dosage directly with reasonable accuracy, though this method has its disadvantages. Since the introduction of the Coolidge tube and interrupterless transformer, it has been possible to measure the roentgen ray indirectly with considerable accuracy, even greater than with the use of pastilles. This method, on which MacKee's [1] work in roentgen therapy is based, is simple, flexible and safe in the hands of a conscientious and reasonably experienced operator.

My technic has consisted in giving one fourth of what Remer and Witherbee [2] described as a "skin unit" of unfiltered roentgen ray at weekly intervals for from twelve to fifteen or even twenty treatments. The factors used to obtain one fourth of a "skin unit" were 2 milliamperes, a 6 inch spark gap, forty-five seconds and a distance of 8 inches (from anode to skin), no filtration being used. When irradiating the face, I have generally given three separate exposures, one to the forehead and one each to the sides of the face and neck. I agree entirely with MacKee in preferring unfiltered irradiation, as it has proved perfectly safe and efficient, even for deep seated acne, and its administration is much less time consuming than when filtration is used. On this point, Schmidt,[3] a German roentgenologist, also agrees and takes issue with Hoffmann [4] for speaking of "weakly filtered" irradiation as the "modern" and supposedly best method of treatment.

When using the roentgen ray in the treatment of acne, the greatest care should be taken to avoid an erythema, involving as it does the possibility of future damage to the skin. "Without an erythema," MacKee writes, "it is exceedingly doubtful for telangiectasia to develop." In my experience, I have never noted any telangiectasia in cases of acne since I have used a measured dosage (for more than seven and a half years). A similar statement is made by MacKee, who has treated over a thousand cases of acne by the roentgen ray.

Pigmentation, in the form of freckles or diffuse areas, is an annoying sequela of irradiation, but is never permanent, though occasionally persisting for months. The idea that hypertrichosis can be caused by the roentgen ray is entirely without foundation, in my opinion. The question of scarring after irradiation is one of some importance from the standpoint of the patient, who should be duly warned of the possibility of its occurrence. I am firmly convinced that this scarring is not due to irradiation but to the disease itself. Certainly, pitted scarring is seen in many persons who have formerly suffered from acne without ever having been treated by the roentgen ray.

Even if it is admitted that nearly every case of acne can be cured by the roentgen ray, it would certainly not be advisable to use this agent in such a routine manner. There are many cases of a mild type that are amenable to other methods of treatment, both local and general. There is no doubt that improvement may result from surgical measures (such as expressing comedones and opening abscesses), from soap frictions, peeling lotions, the quartz lamps, etc. Most of these methods have their disadvantages, however. Some are disagreeable to the patient, and, at best, their action is much less permanent than irradiation, relapses occurring with discouraging frequency. After considerable experience with such methods (omitting the question of vaccines for the moment), I have come to the conclusion that except in mild cases of acne, nothing but time and the roentgen ray will effect a permanent cure. For such cases, I feel that, with carefully controlled modern technic, the roentgen ray can be used as a routine method of treatment.

My personal experience with measured roentgen ray in acne is based on a series of 191 patients who received sufficient treatment to form the basis of an opinion as to the value of this method. The great majority of the patients received no other local treatment. General hygienic measures were instituted when necessary, but no particular attention was paid to diet, except to advise against undue consumption of carbohydrates.

Of the 191 cases, the result of treatment in 111 was all that could be desired, the eruption having entirely disappeared at the last visit or shortly after, as ascertained by letter or subsequent examination. In forty-seven cases, the eruption had practically disappeared at the last visit, a few lesions still persisting. In twenty-seven cases, considerable improvement was noted, the majority of these patients being unable, for one reason or another, to take the full course of treatment. There were marked relapses in four cases after the eruption had disappeared, while in two cases, the result of treatment was complete failure. Persistent pigmentation, which eventually disappeared, was noted in two patients, while many of the more severe cases showed scarring after the disappearance of the eruption. The average duration of the disease was four years, the average age 20½ years and the average number of treatments, thirteen; there were 123 females and sixty-eight males.

The first reference in the literature to roentgen therapy in acne consists of brief reports in 1897 by Gautier [5] and Pakhitonov,[6] followed by communications from Ullmann, Hahn, Jutassy, Schiff and Freund and others (quoted by Freund). In America, the first to write on this subject was Campbell [7] in 1902. Other pioneer investigators in this field were Hyde, Montgomery and Ormsby,[8] Pusey,[9] Zeisler,[10] Allen,[11] Williams,[12] and Varney.[13] Pusey, in 1903, wrote: "I think it may be

1. MacKee, G. M.: X-Rays and Radium Treatment of Diseases of the Skin, Philadelphia, Lea & Febiger, 1921.
2. Remer, J., and Witherbee, W. D.: The Action of X-Rays on Plate, Pastille and Skin, Am. J. Roentgenol. 4:303 (June) 1917; Arch. Dermat. & Syph. 1:558 (May) 1920. A full description of the subject is given by MacKee (Footnote 1).
3. Schmidt, H. E.: Zur Roentgenbehandlung der Akne, Deutsch. med. Wchnschr. 43:592 (May 10) 1917.
4. Hoffmann, E.: Ueber Solarson, staphylokoken Vakzine und Roentgenbehandlung der Acne vulgaris, Deutsch. med. Wchnschr. 43:393 (March 29) 1917.
5. Gautier: Traitement de l'acne et de la couperose par les rayons X, Compt. rend. Cong. Internat. de méd. 8:385, 1899.
6. Pakhitonov: L'acne et les rayons X, Compt. rend. Cong. Internat. de méd. 8:385, 1899.
7. Campbell, R. K.: Results Obtained in the Treatment of Acne by Exposure to the X-Rays, J. A. M. A. 39:313 (Aug. 9) 1902.
8. Hyde, J. N.; Montgomery, F. H., and Ormsby, O. S.: A Contribution to the Subject of Radiotherapy and Phototherapy in Carcinoma, Tuberculosis and Other Diseases of the Skin, J. A. M. A. 40:11 (Jan. 3) 1903.
9. Pusey, W. A., and Caldwell, E. W.: Roentgen Rays in Therapeutics and Diagnosis, Ed. 2, Philadelphia, W. B. Saunders Company, 1904.
10. Zeisler, J.: Radiotherapeutic Observations, J. A. M. A. 40:511 (Feb. 21) 1903.
11. Allen, C. W.: Radiotherapy, Phototherapy, Radium and High Frequency Currents, New York and Philadelphia, Lea Bros., 1904.
12. Williams, F. H.: The Roentgen Rays in Medicine and Surgery, New York, the Macmillan Company, 1903.
13. Varney, H. E.: The Use of the Roentgen Ray in the Treatment of Acne Vulgaris, Am. J. Dermat. 10:97 (Feb.) 1906.

safely said that in roentgen rays we have found a method of treating acne more effective than any hitherto at our command." The early enthusiasm over the new method of treatment is reflected in the remarks of Zeisler, who "obtained almost uniformly excellent therapeutic results," and added. "I can only regret that Roentgen's wonderful discovery was not made twenty-five years ago." Varney, in 1906, wrote: "Because of the uniformity and permanency of the results obtained, the writer has used it [roentgen ray] in preference to all other forms of treatment for the past five years." From this period to 1917, there are scattered reports on this subject by Rudis-Jicinsky,[14] Fisher,[15] Thedering,[16] Dösseker[17] and Lain.[18] All are distinctly favorable to roentgen therapy. Occasional case reports during this time, such as those of Foster[19] and Sherwell,[20] recorded severe radiodermatitis following roentgen therapy in acne.

From 1917 to the present, during which time the indirect measurement (with Coolidge tube, etc.) has been more or less widely used, a number of very favorable reports have appeared in this country. The list of authors includes MacKee, who has done so much to establish roentgen therapy in skin diseases on a firm basis, LeFevre,[21] Hazen,[22] Boggs,[23] Semon,[24] Highman,[25] Remer and Witherbee,[26] Michael,[27] Simpson,[28] Reed,[29] Jacoby[30] and others. MacKee, while expressing very conservative opinions on the roentgen ray in acne, says that it is "our most efficacious therapeutic agent" in this disease. Hazen, in 1917, stated that "the use of the roentgen ray in acne is justified as a routine procedure by those who are absolutely certain of the roentgen-ray technic, and by no others, since much damage can easily be done by an inexperienced operator. The proper use of the rays affords much the quickest and surest way of controlling the disease." Jacoby expresses my own views completely when he says that the "roentgen ray in acne vulgaris is the best treatment we possess, and in the hands of an operator who follows modern measured technic, and is careful to keep his apparatus in good working order, is perfectly safe." In a paper read before this section in 1922, Hazen and Eichenlaub[31] expressed very favorable opinions, basing their conclusions on an experience with 170 carefully followed cases. In the discussion, favorable opinions were expressed by Lain, Wise, Guy, Pusey and myself, while Sutton, from some bad results he had seen, thought that "the average man had better leave the treatment alone." Finally, among recent textbook writers, very favorable views are held by Pusey,[32] Haldin Davis[33] and McKenna,[34] while Brocq,[35] Hartzell,[36] Ormsby,[37] Schamberg[38] and Macleod[39] think that roentgen therapy should be reserved for rebellious or selected cases.

VACCINE THERAPY

It is generally agreed that the bacilli found in the comedo by Unna, in 1893, Sabouraud, in 1897, and Gilchrist, in 1899, are identical organisms. Unna found the bacillus in smears and sections, though he was unable to obtain cultures. He considered it the cause of both comedo and pustulation. Sabouraud was able to cultivate his organism, and considered it the cause of the comedo, while he thought that the pustulation was due to secondary infection with staphylococci. Gilchrist thought that the organism which he called "Bacillus acnes" was the cause of all the lesions of acne. In all of his cases, he found it in smears, and in 30 per cent. of his cases he was able to grow it.

At the present time, the weight of opinion seems to favor the views of Sabouraud, Whitfield and others that the so-called acne bacillus is the cause of the comedo, while pyogenic staphylococci are responsible for the pustulation. Some doubt that the acne bacillus is pathogenic, Macleod[40] stating that "he was not convinced that the acne bacillus was the cause of the comedo and that it was not simply an organism that found a suitable soil in the sebaceous plug."

Whatever may be the relationship of these organisms to acne, the question of their therapeutic value in the form of vaccines is a matter to be decided by experience. It was early found that the estimation of the opsonic index was unnecessary as a routine procedure. It has also been accepted by the majority that there is little or no difference in efficiency between stock and autogenous vaccines.

From 1909 to 1913, the vaccine treatment of acne occasioned very considerable interest and was given an extensive trial, especially in England and the United States. Until recently, I had supposed that the interest in this subject had largely ceased and that the use of vaccines in acne was now rather infrequent. My attention was directed to the fact that vaccines are still largely used by the general practitioner, at least, from the widely circulated advertisements of certain manufacturers. I was also impressed by statements of patients who had previously received vaccine treatment without benefit. As a result of such statements, in addition to unfavorable opinions of some of my colleagues and some early work of my own, I became decidedly prejudiced against the use of vaccines in acne. To ascertain whether my prejudices were unfounded, the literature has been reviewed and opinions have been requested from dermatologic colleagues, which will shortly be quoted.

14. Rudis-Jicinsky, J.: The Treatment of Acne by Roentgen Rays, Am. J. Dermat. **12**: 55 (Feb.) 1908.
15. Fisher, M. K.: Roentgenotherapy in Acne: A Report of Twenty-One Cases, New York M. J. **98**: 70 (July 13) 1912.
16. Thedering: Ueber die Strahlenbehandlung der Acne vulgaris, Strahlentherapie, **1**: 557, 1912.
17. Dösseker: Die Roentgenstrahlen Behandlung der Acne vulgaris, Therap. Monatsh. **29**: 440 (Aug.) 1915.
18. Lain, E. S.: Radiant Energy in the Treatment of Diseases of the Skin, J. A. M. A. **65**: 1892 (Nov. 27) 1915.
19. Foster, B.: Results of Excessive X-Ray Dosage in the Treatment of Acne, J. Cutan. Dis. **27**: 75 (Feb.) 1909.
20. Sherwell, S.: Results of X-Ray Treatment for Acne, J. Cutan. Dis. **29**: 387 (July) 1911.
21. LeFevre, W. J.: The Roentgen Ray Treatment of Acne: A Résumé of Fourteen Years' Experience, Ohio M. J. **13**: 87 (Feb.) 1917.
22. Hazen, H. H.: The Roentgen-Ray Treatment of Acne Vulgaris, J. A. M. A. **69**: 977 (Sept. 22) 1917.
23. Boggs, R. H.: The Treatment of Acne by the Roentgen Ray, Urol. & Cutan. Rev. **22**: 325, 1918.
24. Semon, H. C.: The X-Ray Treatment of Acne Vulgaris, Brit. M. J. **1**: 701 (May 22) 1920.
25. Highman, W. J.: The Modern Treatment of Acne, New York M. J. **113**: 137 (Jan. 22) 1921.
26. Remer, J., and Witherbee, W. D.: X-Ray Treatment of Acne Vulgaris, M. Rec. **99**: 482 (March) 1921.
27. Michael, J. C.: The Use of Roentgen-Ray Treatment in Commoner Dermatoses, Texas State J. Med. **17**: 256 (Sept.) 1921.
28. Simpson, C. A.: X-Ray in Dermatology, Virginia M. Semimonth. **40**: 122 (June) 1922.
29. Reed, E. W.: X-Rays in Diseases of the Skin, Brit. M. J. **2**: 539 (Sept. 23) 1922.
30. Jacoby, R.: Roentgen-Ray Treatment of Acne Vulgaris, Boston M. & S. J. **187**: 793 (Nov. 30) 1922.
31. Hazen, H. H., and Eichenlaub, F. J.: The Roentgen-Ray Treatment of Acne Vulgaris, Arch. Dermat. & Syph. **41**: 671 (Nov.) 1921.
32. Pusey, W. A.: The Principles and Practice of Dermatology, Ed. 3, New York, D. Appleton & Company, 1917.
33. Davis, Haldin: Skin Diseases in General Practice, London, Henry Frowd, 1921.
34. McKenna, R. W.: Diseases of the Skin and Manual for Students and Practitioners, London, Bailliere, Tyndall and Cox, 1923.
35. Brocq, L.: Précis-Atlas de pratique dermatologique, Paris, Octave Doin, 1921.
36. Hartzell, M. B.: Diseases of the Skin, Ed. 2, Philadelphia, J. B. Lippincott Company, 1919.
37. Ormsby, O. S.: Diseases of the Skin, Ed. 2, Philadelphia, Lea & Febiger, 1921.
38. Schamberg, J. F.: Diseases of the Skin and Eruptive Fevers, Ed. 4, Philadelphia, W. B. Saunders Company, 1921.
39. Macleod, J. M. H.: Diseases of the Skin, New York, Paul B. Hoeber, 1921.
40. Macleod, J. M. H.: Tr. XVII Internat. Cong. Med., 1913, p. 422.

My personal experience has been chiefly confined to the use of acne bacillus vaccines, administered, as far as possible, in accordance with the suggestions given by Engman.[41] The results in a reasonably large series of cases were not sufficiently good, in my opinion, to warrant the continuance of this treatment. The work was done shortly after the appearance of Engman's communication in 1910, though the records, unfortunately, were not preserved.

During the last few years, I have made it a point to question every patient suffering from acne in regard to former treatment with vaccines or "serum," as such treatment is frequently characterized. There were sixty-four who had previously received such treatment, of whom forty-nine stated that no improvement had resulted; ten thought that there was a temporary improvement, while five considered that the eruption had been made worse by the vaccines. Twelve patients had received an average of thirteen injections, while another had been given three courses of about twenty injections each, by different physicians. From the statements of these sixty-four patients, it is, of course, impossible to obtain any idea regarding the type of vaccine that was administered or of the technic that was used. The information is merely included for what it may be worth.

In the literature on vaccine therapy in acne vulgaris, the names of Whitfield in England and Gilchrist and Engman in America stand out prominently among the pioneer workers. Engman, in 1910, wrote that "the treatment of acne vulgaris with suspensions of acne bacillus has proven in our hands the most brilliant therapeutic agent we have yet seen in dermatology." He described in detail the method he had used, the success of which, in his opinion, depended on the size and interval of dosage.

Lovejoy[42] used vaccines in a series of fifty cases, and concluded that the results were fully as satisfactory with stock as with autogenous vaccines. Smiley[43] reported the results of treatment in 100 cases by autogenous vaccines, stating that 92 per cent. of his cases had been cured. "The results," he wrote, "are so uniformly good that where one can control the patient, a cure can be promised in every case." He also said that the vaccine cures the constipation, headache, malaise and the nervous irritable disposition, and added that "the musculature of the skin regains its normal tone and color"—certainly a remarkable result to be obtained by any therapeutic agent.

Potter[44] thought that the results obtained by autogenous vaccines were "uniformly good, in many instances even brilliant." He also added that "acne vulgaris is not always amenable to vaccine therapy, often requiring much care and persistence before a cure can be obtained." Galbraith[45] said, in regard to the treatment of patients with acne, "A great majority can be greatly benefited and a fair proportion cured." He further stated that "the duration of treatment extends from three to five months in the milder cases, from six to twelve months in the severe forms."

41. Engman, M. F.: Treatment of Acne Vulgaris with Acne Bacillus Suspensions, Interstate M. J. **17**: 943 (Dec.) 1910.
42. Lovejoy, E. D.: Treatment of Acne with Stock and Autogenous Acne Bacillus Vaccines, Am. J. M. Sc. **163**: 693 (May) 1912.
43. Smiley, Orvall: Acne Vulgaris Treated by Autogenous Vaccines: Report of One Hundred Cases and Method of Procedure, J. A. M. A. **58**: 1274 (April 27) 1912.
44. Potter, A.: The Treatment of Acne Vulgaris by Autogenous Vaccines, Long Island M. J. **6**: 396 (Oct.) 1912.
45. Galbraith, T.: The Vaccine Treatment of Acne and Allied Conditions, Practitioner, London **89**: 370 (Sept.) 1912.

In a review of the subject, Morris and Dore[46] state that as the result of an extensive use of vaccines in acne, they "have been compelled to form a very qualified estimate of their value. Our experience certainly does not warrant us in advising their employment as a routine form of treatment." They consider that vaccines should be "reserved for carefully selected cases," and add that there is a tendency to relapse, and that it is usually necessary to continue treatment for a long time and to "reinforce it with other measures."

At the International Congress of Medicine in 1913, vaccine therapy was a subject of special discussion before the Section on Dermatology. Whitfield[47] regarded vaccine treatment in acne as a useful adjunct to other therapeutic measures, and also said, "I have found that a great number of cases will not yield to it alone." Gilchrist[48] stated that "vaccine therapy has proved to be of great value in the treatment of acne." Lassueur,[49] at the same meeting, reported on the treatment of eighty-seven cases, saying that vaccine therapy "gives at times very pretty [*très beaux*] results, most often a temporary amelioration." Macleod, in the discussion, stated that a certain number of cases of acne had been treated in his clinic solely by vaccines, while in others local treatment, in addition, had been used. "By far the best results," he thought, "were obtained in the latter group of cases, and it seemed to him as if the benefits were largely due to the local treatment."

Auner,[50] in a recent report, says, in regard to acne vaccines, "Our experience has proved so supremely disappointing that I have practically abandoned its use in the disorder." Engman,[51] in a recent communication (1921), writes in a less enthusiastic vein than before, considering that the specific effects of the vaccines are best seen in the indurated and cystic types, while they have less effect on the more superficial forms of the disease.

Among authors of recent textbooks on dermatology, Darier[52] says, "my own experience with vaccines has not been very favorable," while both Sutton[53] and Schamberg state that their results in general have been "disappointing." Sequeira[54] says that vaccines may sometimes prove of value in chronic cases, while Stelwagon[55] has employed this agent as an adjuvant in some "extreme or persistent cases." Thibierge and Legrain[56] state that "staphylococcic vaccines, especially autogenous vaccines, are equally able to arrest the development and prevent recurrence of the larger pustular lesions, but have no effect on the majority of cases of ordinary pustular acne." Finally, Pusey says, "In most hands, I think, the treatment is a failure. After long use of vaccines in acne, I have discarded them as useless in my experience."

In an attempt to learn the opinions of some representative dermatologists at the present time in regard to

46. Morris, M., and Dore, E.: The Treatment of Acne by Vaccines, Brit. J. Dermat. **23**: 311 (Oct.) 1911.
47. Whitfield, A.: The Vaccine Treatment of Skin Diseases, Tr. XVII Internat. Cong. Med. Sect. **13**, Part 1, 1917, p. 193.
48. Gilchrist, T. C.: Vaccine Therapy as Applied to Cutaneous Diseases, Tr. XVII Internat. Cong. Med., Part 2, 1913, p. 405.
49. Lassueur, A.: Tr. XVII Internat. Cong. Med., Part 2, 1913, p. 420.
50. Auner, J. F.: Some Suggestions in the Treatment of Acne, J. Iowa State M. S. **11**: 173 (May) 1921.
51. Engman, M. F.: Acne Vaccine Therapy, J. A. M. A. **76**: 176 (Jan. 15) 1921.
52. Darier, J.: A Textbook of Dermatology, Pollitzer, Ed., Philadelphia, Lea and Febiger, 1920.
53. Sutton, R. L.: Diseases of the Skin, Ed. 4, St. Louis, C. V. Mosby Company, 1921.
54. Sequeira, J. H.: Diseases of the Skin, Ed. 3, Philadelphia, P. Blakiston's Son & Co., 1919.
55. Stelwagon, H. W.: Diseases of the Skin, Ed. 9 (Gaskill), Philadelphia, W. B. Saunders Company, 1921.
56. Thibierge, G., and Legrain, P.: Précis de therapeutique des maladies de la peau, Paris, Gaston Doin, 1922.

the vaccine treatment of acne, a questionnaire was recently sent to the members of the American Dermatological Association. Of the seventy-nine members to whom letters were sent, seventy-one replied, including Drs. H. E. Alderson, A. P. Biddle, A. W. Brayton, F. S. Burns, John Butler, R. B. Carmichael, E. D. Chipman, H. N. Cole, W. H. Corlett, G. D. Culver, C. N. Davis, R. H. Davis, C. C. Dennie, J. A. Elliott, M. F. Engman, O. H. Foerster, J. A. Fordyce, H. K. Gaskill, Herman Goldenberg, Joseph Grindon, W. H. Guy, Marcus Haase, M. B. Hartzell, H. H. Hazen, W. J. Highman, H. G. Irvine, R. C. Jamieson, L. W. Ketron, Jerome Kingsbury, J. V. Klauder, F. C. Knowles, J. E. Lane, David Lieberthal, E. D. Lovejoy, E. L. McEwen, G. M. MacKee, A. J. Markley, J. H. Mitchell, D. W. Montgomery, W. H. Mook, Howard Morrow, L. B. Mount, E. L. Oliver, O. S. Ormsby, L. C. Pardee, Sigmund Pollitzer, W. A. Pusey, Augustus Ravogli, Isadore Rosen, E. W. Ruggles, Alfred Schalek, J. F. Schamberg, H. J. Schwartz, F. E. Senear, C. Morton Smith, D. King Smith, A. W. Stillians, J. H. Stokes, R. L. Sutton, Samuel Sweitzer, H. P. Towle, H. R. Varney, H. J. F. Wallhauser, Ludwig Weiss, G. W. Wende, C. J. White, H. H. Whitehouse, U. J. Wile, C. M. Williams, J. M. Winfield and Fred Wise.

Two questions were asked regarding "acne bacillus vaccines," and two regarding "mixed vaccines" (of acne bacillus and *Staphylococcus albus, aurens,* etc.). Each correspondent was asked whether he had used these agents and whether he considered them to be of great value, of some value or of no value. In reply, sixty-two stated that they had used acne bacillus vaccines, of whom two considered them of great value, thirty of some and thirty of no value. The mixed vaccines had been used by sixty-three of my correspondents, of whom five had found them of great, forty-two of some, and sixteen of no value. According to these figures, a trifle over 50 per cent. found the acne bacillus vaccines of more or less value, while 75 per cent. gave similar answers regarding mixed vaccines.

That these statistics are much less favorable to vaccine therapy in acne than they appear is evident from the qualifying statements that were made under a column in the questionnaire for remarks. Of the two correspondents who thought acne bacillus vaccines of great value, the qualifying clause, "in certain cases," was added, while it was also remarked by one that he had obtained "no results from the mixed vaccines." Of the five who considered mixed vaccines of great value, qualifying statements were again made, such as, "in certain instances," "in 30 per cent. of acne simplex and indurata," and "in chronic indurated types."

The remarks of those who considered either one or both types of "some" value were even more qualified. Many evidently hesitated to condemn them absolutely by answering "no" value, though their opinions of these vaccines were evidently not very flattering. Of the forty-two correspondents who considered the vaccines of some value, four had entirely, and one "practically," given up their use. Three considered them of "very slight value," one adding that his remarks about them were "not fit to print." Vaccines were considered of temporary value by three, while five of my correspondents found them "disappointing." Adding these obviously unfavorable opinions to the fifteen who answered "no value," the figures would show a total of 50 per cent. who evidently had a poor opinion of vaccine therapy in acne.

Of the remaining correspondents, seventeen considered vaccines to be of some value in certain selected cases, particularly of the pustular type, while six considered them of some value as an adjuvant to other forms of treatment. Of those who thought that there was no value in either type of vaccines in acne, the majority had given them a thorough trial before discontinuing their use.

SUMMARY AND CONCLUSIONS

The roentgen ray has now been used for many years in the treatment of acne. While its therapeutic value in this disease was early recognized, its dangers were also soon apparent. Good results were possible to obtain even with the old unmeasured technic, when used by men of special skill. Since the introduction of accurate methods of measurement, the technic has been greatly simplified. In the hands of a careful operator, using modern apparatus and measured dosage, the roentgen ray is now as safe as it is efficient. The results in the treatment of acne are more permanent than with any other therapeutic agent.

The introduction of vaccine therapy in acne occasioned considerable enthusiasm for a period of years. After an extensive trial of this method, the majority of dermatologists have either wholly or partly given up its use. Good results have undoubtedly been obtained by a few investigators after patient efforts with special technic. In the hands of the majority, the results in general have been unsatisfactory. The weight of opinion is that mixed vaccines (of both acne bacillus and staphylococcus) are of more value than those of acne bacillus alone. Stock and autogenous vaccines are considered by the majority to be of equal efficiency. Whatever value these vaccines may possess is restricted to their use in selected cases, chiefly of the pustular type, or as an adjuvant to other methods of treatment. The action of vaccines is slow, and improvement is often temporary. In the treatment of acne vulgaris, the roentgen ray is far superior to vaccines.

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ABSTRACT OF DISCUSSION

DR. ERNEST DWIGHT CHIPMAN, San Francisco: In any consideration of the treatment of acne, our first concern is with the primitive lesion, and that is the blackhead. The blackhead results from one or two causes: (1) an excessive activity in the sebaceous glands, and (2) a faulty distribution in the product of the gland. The cause, therefore, may be overproduction or faulty distribution. In many cases we shall get satisfactory results by local treatment directed toward the distribution or the carrying away through good drainage of the products of sebaceous activity. That is partially accomplished by the use of strong soaps through their keratolytic action. Subsequently we use sulphur and resorcin for their further keratolytic effect as well as for their specific action on the sebaceous glands. There are cases that resist this local treatment, and we are then confronted with the problem of what we shall use next. We may consider the roentgen ray or vaccines. In answer to Dr. Fox's questionnaire, I told him that I had abandoned the use of vaccines. I have had no results whatever from the use of plain acne vaccines, and I believe that the results obtained from the mixed vaccine could have been obtained by simpler methods. I agree with Dr. Fox entirely as to the superiority of the roentgen ray over vaccine therapy. I do believe, however, that in the simpler cases we are safer in trying first the more simple direct topical applications. Failing in that, I believe we should attack the ultimate production by causing an atrophy of the sebaceous glands through the use of the roentgen ray.

Dr. Fred Wise, New York: The treatment of acne by vaccines and other methods has so many angles, and the disease has so many vagaries in different cases, that in the short time Dr. Fox had for his paper there was not time to go into detail as to any form of treatment, except to decry the use of vaccines and to laud the use of the roentgen ray. The use of vaccines has been attended with more or less unsatisfactory results because different men have used different vaccines. There is no question that the use of acne vaccine alone in the hands of most dermatologists is of no value whatever; but the question arises, What effect do we get when we use vaccine together with the other necessary factors required in the obstinate cases of acne? I am not so pessimistic about the use of vaccines as is Dr. Fox. I reserve their use for those cases which the roentgen ray will not cure after a certain number of exposures. Let us say that a patient receives fifteen roentgen-ray treatments at proper intervals, and that the acne still persists. It may be pustular, or the blackhead may be the chief offender. In those cases the use of staphylococcus and colon bacillus vaccine does give good results. The factors of interest are these: Is the patient's general health good? We can use vaccines in patients with gastro-intestinal disturbances without effect until the constitutional disturbance is relieved. Then there is the question, How long should the patient continue taking the vaccine? That is a point that even those with great experience in the use of vaccines have not decided definitely. There are dermatologists and others in New York who limit themselves to a dozen doses, and others give up to 100 doses, so that the important point is that vaccines are useless remedies in some cases; but in the obstinate cases, when it is dangerous to continue the use of the roentgen ray until complete atrophy has taken place, it is advisable to use a combination of staphylococcus and colon bacillus vaccine and to continue it for at least three months before the case is regarded as being intractable.

Dr. Samuel Ayres, Jr., Los Angeles: I would not have objection to submitting my face to roentgen-ray therapy for acne in the hands of a competent man, such as Dr. Fox, but I should hesitate to submit to the treatment in the hands of the usual radiotherapist or physician, and I think it is well to call attention to that fact, especially if we are advocating the roentgen ray for the treatment of ordinary, benign skin conditions. Many patients do not necessarily consult dermatologists but general practitioners and radiologists, and when they demand this treatment, it is usually given them, and often it is not given properly. The results are rather disappointing, and are bad for the practice of medicine in general. It is not uncommon to see the unsatisfactory results from such treatment of ordinary cutaneous conditions. I have seen three cases of permanent alopecia in children who had received roentgen therapy for ringworm of the scalp; contracture of the hand from the treatment of eczema; a patient who still had active acne vulgaris in addition to loss of lanugo hair, who had received intermittent roentgen-ray treatments during a period of two years by a very competent dermatologist in the East, and a case of incontinence of feces due to radiodermatitis in the treatment of pruritus ani. Such cases are numerous, and we should put in a word of caution and conservatism. If the work is done by only competent dermatologists with sufficient experience, it is all right; but in advocating this treatment we must remember that the patients will learn to demand it and that the great majority will not be treated by experts. I have obtained excellent results through the use of the quartz light. I know that statements have been made that the results obtained by this method are only temporary; but in several cases which I have followed for two years at least, the results are good. Another thing we should do in the treatment of acne is to consider the cause. The acne does not develop without a cause, and one of the frequent contributory causes is disturbance in digestion, sometimes due to excessive sugar intake, and we should remedy that. Possibly the endocrine system is at fault. I should like to know how long Dr. Fox has been able to follow his cases in regard to the development of radiodermatitis, and whether there has been any development of this in a period of two, three or four years.

Dr. William H. Guy, Pittsburgh: I subscribe in toto to the remarks Dr. Fox made. A notable feature in the discussion of such a paper as this is the lack of adverse criticism by any one who has the equipment and training necessary for the proper administration of the roentgen ray. Scarring has been mentioned as a contraindication for this treatment, but I am convinced that it is the result of the disease and not of the treatment. I have repeatedly seen both treated and untreated patients with unsightly scarring. In these cases, the ultraviolet light does some good in smoothing out the scars left after the clearing of the acne, regardless of the method used. In this work we use very heavy dosage with the production of a severe dermatitis, and this is repeated at intervals of two or three weeks. I think that the roentgen ray is the best remedy we have at the present time in the treatment of acne, in competent hands, and that nothing can take its place. It is surprising that the more severe and aggravated the disorder, the more readily it heals. The cases that respond less readily are the mild cases with comparatively few lesions. This type of case I treat with some other form of therapy. I think that in most cases the roentgen ray is definitely indicated and the most valuable therapeutic agent we have.

Dr. Moses Scholtz, Los Angeles: It must be granted that roentgen-ray treatment is much more efficient and reliable than vaccine in acne. Yet I am not ready to subscribe to the idea that the roentgen ray is to be used in every case of acne. Roentgen ray cures acne skin lesions rather than acne itself. The man using the roentgen ray should not fail to remember that acne is a systemic, metabolic or possibly endocrine disorder and not merely a local lesion. As to the safety of the roentgen ray, even though the idea of idiosyncrasy is disregarded with the modern precise technic, the individual actinic hypersensitiveness is still assumed by many, and the possibility of a delayed reaction is always there. As to the permanence of the effect of roentgen-ray therapy, it depends entirely on the dosage given. The nearer we approach the danger zone, the longer the improvement will last. Recently I saw one of the worst cases of acne recurrence in a physician's son who was treated with the roentgen ray only a few months before by the foremost radiologist of Los Angeles. Should we treat this young man with the roentgen ray on each recurrence of the disorder? I believe that roentgen-ray treatment should be reserved for the unusually stubborn and aggravated cases of acne. Many cases of acne respond to the old fashioned treatment of sulphur ointment, green soap and diet, mentioned by Dr. Chipman. We all had experience with splendid therapeutic effects of the ultraviolet light in acne, and I see no reason for using the roentgen ray in every case of acne that may respond to other simpler and safer therapeutic agents. I am afraid that by broadcasting a notion that roentgen-ray treatment of acne is a safe and simple procedure would do more harm than good by encouraging many dermatologically incompetent men to treat acne skin lesions instead of treating the patient as a whole.

Dr. J. C. Pickett, San Francisco: In the treatment of acne, when the skin is very oily, I find that oronite removes the oil with no irritation to the skin. Oronite is a high proof gasoline used as priming spirits for aeroplane motors.

Dr. Thomas W. Ross, Portland, Ore.: I have had not a few years' experience with the roentgen therapy in acne. Patients I treated ten years ago I see frequently on the street and can judge of the permanence of cure. I think that with the roentgen ray alone most cases of acne can be cured absolutely. I am not like the men in the large cities who seldom see their patients three or four years after they finish the treatment, for I meet mine very often in a nonprofessional way.

Dr. Harry E. Alderson, San Francisco: There are many methods of treating acne, particularly when the underlying conditions are taken care of. I use the roentgen ray and, as a rule, I am satisfied with it; but occasionally I have cases in which the pustules are localized, and I feel that in those cases the vaccines are justified. I use a polyvalent staphylococcus vaccine, made from thirty or more strains of

the staphylococcus, and do not continue its use long. Since fat solvents have been mentioned in the discussion, I should like to call attention to carbon tetrachlorid, which I have been using a good deal.

DR. EARL D. CRUTCHFIELD, Galveston, Texas: In looking over the results in a series of about 200 cases of acne, it seems that 97 per cent. of them responded to roentgen-ray therapy, without any sequelae. If Dr. Fox had given the technic he would have laid down a premise which would have prevented a good deal of the criticism of the method. The treatment requires a Coolidge tube and an accurate knowledge of definitely adjusted tubes. Of course, the roentgen-ray treatment given by poorly adjusted tubes and improperly applied is likely to give poor results; but this, I think, does not enter into the consideration of the treatment of acne by roentgen-ray therapy at this time. In the few cases that did not respond well to this treatment, vaccines have been of some service, not for the acne itself but for the pustular element involved; and one form has apparently been as good as the other. The typhoid vaccine has been as efficacious in a small series as has the staphylococcus vaccine or other vaccines. The anaphylactic shock seems to be the principal point from which results are obtained.

DR. F. A. BUTLER, San Diego, Calif.: In cases of pustular acne we must puncture the pustules and get the contents out of them, and after that almost any kind of treatment will prove successful. If we see a case of pustular acne all over the face, or anywhere else, the first step is to get the contents out by puncturing the pustule, and then compressing gently to prevent traumatizing the surrounding parts. Correct constitutional treatment is imperative in many of these cases, if not all.

DR. JESSE ETTELSON, Portland, Ore.: When I left the Vanderbilt Clinic I thought the roentgen ray was the treatment *par excellence* for acne. Later I found there were certain types of cases, particularly the pustular type, which, it seemed to me, at times were made worse by the roentgen ray. When I was East again, I asked about this and was told that I was mistaken; but in reading MacKee's book I found that he speaks of two or three cases in which the roentgen ray made pustular acne worse. Dr. Engman of St. Louis said he had very good results from vaccines. After returning to Portland, I first tried vaccine in all the cases of pustular acne and in the cases in which I have used the colon and staphylococcus vaccine to reduce the pustulation, and have then gone on and treated them with the roentgen ray, using the MacKee-Riemer method, I have had excellent results.

DR. HOWARD FOX, New York: In the time allotted for reading this paper, some aspects of the subject were necessarily omitted. Although I have used the roentgen ray in the treatment of skin diseases for the last nineteen years, it is only by means of modern apparatus and measured technic that my results have been reliable. With the old unmeasured technic (with gas tubes, etc.) it was possible to obtain good results, but treatment was always attended with dangerous possibilities. In regard to telangiectasia in acne, this has not occurred in a single case in the last seven and a half years, during which time I have used a measured dosage. Many of my patients have been followed for three or more years. I wish to emphasize the fact that I do not advocate the roentgen ray as a routine treatment for all cases of acne. There are certainly some mild cases that can be cured by various other simpler methods. These other methods were not discussed in this paper, which was confined to the subject of roentgen-ray and vaccine therapy. Regarding the question of scarring, it is most advisable to warn every patient that scars are liable to be present after the disappearance of the eruption and are not due to treatment but to the disease itself. We see scarring in many persons who suffered from acne but who have never been treated by the roentgen ray. In regard to curing acne by simply opening pustules, while this relieves symptoms it does not eradicate the essential feature of the disease, which is the formation of comedoes. In my opinion, vaccines also fail to do this.

PREVENTIVE MEDICINE PROBLEMS PECULIAR TO THE PACIFIC COAST *

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Health problems all over the United States are similar, but in different areas the magnitude of the problems vary to a considerable degree.

Malaria, for instance, a real problem in the South, is not one in the Northwest. Botulism, there almost an unknown disease, is the subject of continuous investigation in the West.

It is well known that the virulence of the ordinary communicable diseases varies in different sections, and it is possible that individuals living in a certain environment may have an increased resistance to these diseases that they would not possess if they lived elsewhere. I have been asked many times why the mortality rate in communicable diseases is so low in the Northwest. It is not because of acquired immunity, as the slums and excessive crowding of the East are not in evidence.

It is true that the Western people, having come largely from the older sections of the United States, where they learned the value of quarantine regulations, are apt to observe them fairly well and so prevent a certain amount of contagion. But the resistance to disease gained by the abundance of fresh air, the life outdoors in all seasons of the year, and a climate which in the Northwest has been scientifically determined by Webber to be the most healthful to live in, I believe may be considered as one of the most important factors in keeping the mortality rate from communicable diseases so low.

The preventive medicine program on the Pacific Coast embraces, of course, the same methods in the control of disease as are employed in other sections of the country. Most of the communicable diseases are handled in the usual manner, although in some instances the activities are quite different. Some of these activities, together with certain problems that are peculiar to the West, I shall briefly discuss.

ENTERIC DISEASE IN IRRIGATION DISTRICTS

A vast area of land is served by irrigation systems, and the inhabitants depend on ditch water pumped into cisterns for drinking and culinary purposes. In one valley alone it is estimated that 25,000 people have no other water supply. Typhoid and paratyphoid exist here, but are not prevalent. A severe form of enterocolitis, however, is very common. The residents in this area are wont to consider it the normal thing to have diarrhea some time during the summer, and, being more or less immune, they are not seriously disturbed, as a rule. But the berry and apple pickers, who come from other sections, often become quite ill until a certain amount of immunity appears to be established. On the other hand, infants and children seem to have little resistance to the infection, and too many deaths have resulted from this cause.

The investigation of this disease is still incomplete. It is not typhoid or paratyphoid A or B. Neither the Ameba nor the Shiga bacillus has been found. Undoubtedly the disease is an intermediate type in the enteric group, and it is hoped that further investiga-

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tion will enable us to classify it properly. In the meantime, the ordinary sanitary measures and an educational campaign insisting on the proper chlorination of cistern water is being carried on in an endeavor to control the infection.

GOITER

Of simple goiter, only a word can be said. Although prevalent in well-known localities served by water supplies deficient in iodin, no effort has as yet been made to remedy this deficiency. In the near future it is expected that one of the large cities in Washington will treat its water supply with sodium iodid with the hope of demonstrating its value in eliminating goiter from the community.

In passing, I wish to state that in one city there has been a marked diminution in the incidence of goiter since its water supply has been properly chlorinated. This being the case, a further line of investigation is suggested in the use of the halogen group.

TULAREMIA

Rocky Mountain tick fever, tick paralysis and botulism are among our special problems, but time does not permit me to discuss them. Tularemia, however, is a disease which I believe should be given especial attention. First discovered in ground squirrels in California, then in rabbits and man in Utah, it is now suspected to exist in Washington, Wyoming, Idaho, Colorado, Indiana, Ohio, North Carolina and Tennessee.

Tularemia, as defined by Dr. Francis of the United States Public Health Service, "is a specific infectious disease due to *Bacterium tularense* and is transmitted from rodents to man by the bite of an infected blood-sucking insect or by the handling and dissecting of infected rodents by market men or laboratory workers." The disease in man is most commonly found in rural districts where rodents are dying from this plaguelike disease. The blood-sucking insect carries the infection from the sick or dying host and transmits it to the human being, ordinarily by biting exposed parts. The organism is so virulent, however, that those who handle the diseased animal are prone to infection, as is evidenced by the report of six cases occurring in Public Health Service laboratories—four, in fact, in the Hygienic Laboratory at Washington, D. C.

The onset of the disease is sudden, following soon after the transmission of the infection. There is fever of the septic type, and pains are severe throughout the body. The patient is prostrated. Lymph glands draining the area of inoculation become swollen and suppurate, and incision is usually required.

The disease lasts from three to six weeks, and convalescence is slow. The first known case to terminate fatally was reported in 1919. It has been proved that the disease is transmitted by the blood-sucking fly, of the species *Chrysops discabis*, the rabbit louse, the bedbug and the mouse louse.

The importance of emphasizing this disease is due to the fact that it may have a wider distribution than is at present known, and that it may not be recognized when a severe infection is encountered. In fact, seven rabbits dead of tularemia have been discovered in the markets at Washington, D. C.

In the Northwest, however, a further problem has recently developed. We have reports of a number of cases of severe infection resulting from tick bites in the state of Washington. The symptoms given conform to those of tularemia. Unfortunately, the causative organism was not identified. It is our hope, however, that further investigation in the state laboratory will allow a positive statement to be made that the tick is another insect that may transmit tularemia. Furthermore, if physicians will bear in mind that a severe infection with suppurating glands may be a case of tularemia, and if each suspected case is reported promptly to the health officials, the epidemiologic work will be greatly benefited.

ORIENTAL DISEASES

Another problem, which particularly concerns the health authorities on this coast, is one of Oriental diseases—hookworm, Japanese liver fluke, amebic dysentery and plague have entered the country through our ports. Not one of these diseases, however, has yet become a menace to our population, with the exception of plague.

Cases of hookworm disease that have appeared have not communicated the infection to any extent; the cases of Japanese fluke are isolated; amebic dysentery may be gaining a foothold, as evidenced by twenty-four cases reported by the Virginia Mason Hospital in Seattle last year.

Plague, however, is a real menace, particularly in California. Dr. Dickie reports that infected ground squirrels were found in nine counties of the state in 1920. Two human cases occurred in San Benito County in 1921, and one case in Alameda County and one in Santa Cruz County in 1922.

Undoubtedly a wide area of California harbors plague-infected rodents, and although the Public Health Service and the California State Health Department have succeeded in controlling the situation in a measure, a real danger exists, not only to the rural population, where the rodents are chiefly found, but to the larger centers of population as well if energetic eradication methods are not persistently pursued. Unfortunately, this work depends on the amount of funds appropriated for the purpose, and only a sufficient amount has so far been available to keep the existing foci under a reasonable degree of control.

Additional foci must be continually guarded against by protective measures at all our ports. Unfortunately, no method has as yet been devised that does not permit of a certain number of rats reaching our shores from the ships at the docks. The United States Public Health Service, in fumigating ships, reduces the danger to a marked degree; and the protective appliances on hawsers aid. But, in spite of these efforts, Oriental rats take up their abode in our seaports, and a plague-infected rodent with its fleas may be among the number at any time.

As Seattle and San Francisco have been visited with human plague, methods for eradication of rats are employed by these municipalities. No adequate measures are enforced by other ports, chiefly on account of lack of funds, and we can only hope that no more foci will appear.

The United States Public Health Service prevents many cases of Oriental disease from entering our country by a thorough examination of the crews of ships and the steerage passengers. Those found infected are either detained till cured or are deported. The cabin passengers, and Orientals who prove they are American citizens, are usually only inspected, and so a number of diseased individuals escape detection.

THE ORIENTAL AMERICAN CITIZEN

The Oriental American citizen we have noticed at the immigration station, and at times we find he cannot speak a word of English. He presents a problem in vital statistics which I wish to touch on. First, allow me to call attention to the fact that the Japanese birth rate on the Pacific Coast is approximately three and a half times greater than the white rate per thousand of population, and if the rate is reckoned per thousand married women of child bearing age, it is slightly more than three times as great.

In investigating this high Japanese rate in the state of Washington, it was believed that the rate was higher than it should be even for so prolific a race. It seemed that there might have been an error in taking the census, or perhaps a certain number of the birth certificates might be false certificates. At first thought, one might wonder why a birth certificate should be falsified; but if it were desired to make a foreign-born child an American citizen this might be done by merely filing a birth certificate for the child with the Vital Statistics Bureau, giving the place of birth as some locality within the state. No investigation of the supposed birth is made, and the law is satisfied. Furthermore, a certified copy of the birth certificate may be obtained and sent to the foreign country where the child may really have been born and there be cherished. In the course of time the child may reach this country and be admitted as an American citizen, the certificate of birth being sufficient. There is no proof that any Japanese or any other foreigner has attempted this method of gaining American citizenship for a foreign-born child, but I believe that our laws should be amended so that the suggested procedure would be impossible. I hope to introduce in our next legislature an amendment to the vital statistics law which will provide that the baby's palm and finger prints of both hands or the foot prints be placed on the birth certificate of every child born of parents who are not American citizens; in addition, it may be wise to include the finger prints of the mother in these requirements.

CULTS

Finally, to consider for a moment the effect of cults on vital statistics. In each of the Pacific Coast states the drugless healers, for instance, chiropractors and sanipractors, are permitted by law to sign death certificates. In order that our statistics may be as accurate as possible, it is necessary to investigate each cause of death as given by these practitioners. At times our investigation is unavoidably delayed. In one instance, for example, the source of twenty-four cases of diphtheria was not discovered until a cause of death given as pneumonia was investigated. Occasionally it is felt that more accurate information may be obtained by sending the ordinary query form to the practitioner. To what extent we are enlightened may be judged by the following returns: A sanipractor gave as the cause of death, "acute indigestion and gases of stomach pressing against heart." Query elicited the following: Primary: "Degeneration of accelerator nerve of the heart." Contributory: "Acute dilitation."

A chiropractor sent in this: Primary: "Dropsy and complications." Contributory: "Heart falior." What test confirmed diagnosis? "*Urinalasis*." The response to the query was this: "Regards further information Pertaining to the partie herein mentioned. Would say. Being a graduate Chiropractor I shall have to give it from a Chriropractic Standpont viz; The real cause of the diseased conditions mentioned were due to subluxation's of the ,seccond. Sixth. and Twelfth Dorsal Vertebra, Thereby impairing the normal flow of Vital energy to the parts supplied by these nerves thus creating a weakened condition of the tisue involved and thereby developing the diseased conditions mentioned."

For a cause of death given by the same man as "Chronic Soar throat and complications." Contributary: "Heart Disease," the same reply was given except that the "Subluxation's" were of the "Sixth Cervical and the Seccond-ninth and Eleventh Dorsal Vertebra." Our investigation proved that the cause of death was actually chronic endocarditis.

From such instances as these we are all too often reminded of the ignorance of this class of practitioner. While admitting that the cults cannot do the medical profession any harm, I believe that from a public health standpoint people should be protected from such ignorant and incompetent persons who attempt to practice the healing art. It is unquestionably our duty to protect people from communicable disease, and it is no less our duty to protect them from preventable injury and premature death. Medical cults based on some theory or other will exist as long as the world endures. When one dies, another will take its place. Therefore, to perform our duty to our people we should see to it that every person who desires to practice the science and art of healing shall be required to pass the same examinations in fundamental subjects before a license to practice is obtained. The details of this scheme are not impossible of arrangement, and the necessary amendments to laws can be passed. We may remove the menace of the cult if we will, and with the menace removed the cult may flourish if it can. In Washington we hope to solve the problem at our next legislature.

CONCLUSION

It has been possible only to summarize the subjects I have mentioned in order that I might give some idea of certain phases of the public health program that specially interests us on the Pacific Coast. We need each other's help on this coast; and in order that united efforts may be made in dealing with our problems, the "Pacific Coast Conference of Health Officials" was formed at Seattle last year. Through this organization it is hoped that closer cooperation may be established between the Coast states and British Columbia to the end that regulations and laws may be standardized, and that through its efforts public opinion may be molded for more concerted action in the promotion of public health.

ABSTRACT OF DISCUSSION

DR. JOHN M. DODSON, Chicago: The real purpose of this paper is not the specific discussion of these diseases, but the solution of the problem of securing prompt recognition, accurate and immediate report from the general practitioner to the health officer, and the guarantee of proper measures to prevent the spread of the disease. I agree with Dr. Turner that the existence of practitioners so utterly unqualified is a serious menace to the health of any community that tolerates it. We should make every effort in the interest of the public to secure legislation that will demand a competent medical knowledge on the part of every one who holds himself out to be a physician. What really disturbs me more than anything else is the fact that many physicians are not only ignorant of the modern development of science, but are indifferent and actually antagonistic to the public health

officers. We shall never have a thoroughly effective health service in this country until every member of the profession is part of it and is engaged in the work. The family practitioner is just as essential to the proper conduct of public health work as is the public health officer. He is the initial factor. It is he who goes to the bedside of the typhus or plague patient, and if he fails to recognize these diseases and report them and see that the proper preventive measures are taken, the epidemic spreads, and the health officer is helpless. I think we need to have continuation courses for practitioners of medicine, which they shall be required to attend at such intervals as shall insure that they have a reasonable knowledge of what is going on. The public knowledge of these things is growing amazingly and rapidly. The public knows a lot more than do many physicians. I am not so sure that the time is not coming in the near future when the public will insist that every practitioner of medicine shall submit to an examination every two or three years to see whether he is dead or alive. And unless we can make physicians realize that when they entered into the practice of medicine they entered into a form of service for the public that demands constant study, alertness and progress, we shall never have a satisfactory health service. The solution of this problem is that every teacher of medicine, surgery, obstetrics and every other branch of the medical curriculum shall have constantly in mind the fact that to teach his students how to prevent disease is of vastly more importance than to teach him how to cure it.

DR. A. T. MCCORMACK, Louisville, Ky.: I am impressed with the great problems of the Pacific Coast, and I disagree with one of my associates from Illinois, that the problem is even more serious in the Central West than here, because there are more chiropractors here. Lies and other parasites increase with population, as a rule. The objective of medical practice acts should be to see that a man is qualified to practice medicine. The only interest the public has in the matter is that a man shall be qualified to recognize and treat disease. We have missed the fundamental. Medical examination boards ought to determine these things as a matter of public interest. The unqualified man should not be permitted to practice. If this section of the country contributes to the nation a real determination that the qualifications of the practitioner shall be based on his worth to the public, it will have contributed the greatest factor for good and for advancement in public health. It is gratifying to see the progress that has been made in this part of the world; and, if it is to continue to be our national playground, it behooves the states to keep their streams pure, to keep their water supplies uncontaminated, to continue the remarkable public health education that they have undertaken, so that the stranger coming here will expect to find such laws and such enforcement of laws as will mean that in this garden spot of our country there shall grow up an upright and healthy population. For many years we were dominated by the problem of our Southern states, hookworm disease and venereal diseases. It is of extraordinary interest to find these active, effective and efficient members of the United States Public Health Service coming before our conference with these discussions and recognition of these new diseases and their methods of prevention. It is of the utmost importance for us to realize—we who live in the interior, where we touch no ocean, and where immigrants come to us after having filtered through miles of territory—that our Congressman knows that the county and state health authorities are absolutely essential to the development of the health of the nation. The state health departments of the whole coast should have adequate appropriations and adequate personnel, because they are the outposts that are protecting us from invasion by foreign diseases. I want especially to extend my congratulations to the health officers of these Western states for the splendid scientific work they are doing, for the self-sacrificing spirit and the energy and enthusiasm with which they are doing a big job in a big way.

DR. JOHN C. SPENCER, San Francisco: I was recently in Portland. I was tremendously struck by the incidence of goiter among the young girls and women there. The popular opinion seemed to be that it was due to the water supply of Portland. Since Dr. Turner has mentioned the probability of the incidence of goiter being due to the deficient halogenization of the water supply, it immediately brought to my mind the fact that San Francisco is going to have a wonderful water supply within a very few years. I speak of this with particular interest because I have just returned from inspecting the Hetch Hetchy Valley water supply system. One thing told me there was that the water of this supply was so pure that in the storage batteries they use the water from this source in preference to distilled water. This deficiency in iodin and chlorin may be present in our future supply. It seems to me an opportune time to call attention to the fact that if such a pure water supply as that of Portland, Ore., can be affected so perniciously as to cause goiter, it might possibly be a factor in the future health of San Francisco. Possibly there might be a development of goiter in San Francisco from our pure water supply from the Hetch Hetchy and Toulumne River, in the not very distant future.

DR. J. C. PERRY, San Francisco: We know that plague has existed in the ground squirrels of California since 1902, and it was proved in 1908. It is a situation fraught with danger to the state of California and to the counties in which endemic foci of plague have been determined; also from the possibility of its spread to other parts of the United States. The danger, of course, is twofold. In the first place, the occurrence of human cases of plague from these foci. This was demonstrated by an outbreak occurring in Oakland in 1919 when there were fourteen cases of plague of the pneumonia type, traced originally to one case of bubonic plague acquired by skinning a squirrel. This occurred in Richmond, one of the chain of cities on the bay. But the great danger is that of a possibility of infected squirrels contacting with rats. We have caught rats and squirrels from the same burrow, and, as long as the infection exists in ground squirrels, and there is a possibility of their contact with rats, plague will be very near to centers of population, with the resultant expense of extermination and economic loss from quarantine and other causes. In 1920 we were able, with a limited appropriation, to make a resurvey of the ten counties in which plague had been previously present, and it was found in every place in which it had existed before. Last year it was demonstrated in two counties, and this year, in Contra Costa County. Eight plague-infected squirrels were proved out of 500 examined within two miles of a center of population. Those are the conditions that exist today. Appropriations are small. It is like a volcano that may burst into flame or eruption at any time.

DR. N. E. WAYSON, San Francisco: Tularemia, as I believe Dr. Turner said, has been known on the Pacific Coast since about 1912. The disease was known among officers of the Public Health Service, but was first referred to as a plague-like disease, so named, because of the striking resemblance, in the guinea-pig between the lesions of bubonic plague and those of the disease in question. The first contact made was with rodents in one of the more southern counties—Tulare County, I believe. In 1914, contact was made with the disease in Contra Costa County. In 1915, experimental work showed that it could be transmitted by insects so common as the stable fly, the common biting fly that so frequently annoys us. It was also found that it could be transmitted by contact; for instance, by allowing the ordinary house fly to crawl over the infected viscera of the guinea-pig, and then crawl over a cocainized eye of another guinea-pig. Within the last two or three years, Dr. Francis of the U. S. Public Health Service has made a more elaborate investigation of the so-called "deer fly" disease in Utah, and it was of this particular work, I believe, that Dr. Turner spoke. A number of us who have been more or less familiar with the disease have felt that probably the periodic epizootics that sweep through the rabbit population of these more Western states is caused by it. However, definite investigations have not been made to follow this belief.

Cyanosis.—The factor mainly responsible for the production of cyanosis at high altitudes is incomplete oxygenation in the lungs due to low atmospheric oxygen tension.—Lundsgaard and Van Slyke: Cyanosis, *Medicine*, February, 1923.

THE GROWING IMPORTANCE OF PREVENTIVE MEDICINE TO THE GENERAL PRACTITIONER*

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No world can indulge in such a frightful orgy of war as that which occupied our world from 1914 to 1918 without paying the penalty in a tremendous burden of grief and wretchedness and a violent disturbance of social and economic conditions. In such a postwar disturbance, some groups are more profoundly and widely affected than others. Among the groups which were most seriously disturbed by the war was that of the medical profession. There are daily evidences of this on every hand, and a feeling of unrest and dissatisfaction. The conviction that "something must be done about it" is all but universal.

In the field of medicine, other factors had been at work before the outbreak of the war which, alone, would have been sufficient to bring about a radical change in the economic and social relations of the physician. The triumphs of preventive medicine resulting in a very substantial decrease in the incidence of disease was, and continues to be, an appreciable and growing factor in reducing the average income of the physician. The number of physicians had come to be greatly in excess of the need, a ratio nearly twice as great as that obtaining in any other country. The rapid increase in the number of hospitals and the hospitalization of medical practice in many localities, the inevitable and rapid development of specialism, improved roads, and automobiles have had their effect in modifying the situation of the physician in relation to his clientele.

The advance in medical education, which has almost quadrupled the amount of time and money necessary to secure the required years of schooling twenty years ago, makes the investment of the medical student of today much greater than that of his predecessor. Indeed, at present the cost of equipping oneself for medical licensure and medical practice is greater than the cost of preparation for any other profession.

While, in most of the trades and professions, the wage or salary scale has been advanced to correspond with the greatly increased cost of living, physicians in many localities have failed to advance the fee table, and the prices for professional calls, office visits and other services have not been raised beyond those that prevailed ten years ago.

New medical cults and fads appear from time to time, a new one every few years. Just now the most conspicuous ones in the field are Eddyism, or so-called Christian science, osteopathy, with its hybrids, chiropractic, naprapathy and the like, and, most recently, Abramsism, the most fantastic and incredible of all.

Finally, some of the handmaidens of the physician, conspicuously the nurse and the social service worker, invaluable aids when properly directed, have crossed over into fields of work inadequately tilled by the busy practitioner, until at times it seems difficult to draw the boundary line between the field of the physician and that of the nurse or of the social service worker.

*Read before the joint meeting of the Section on Diseases of Children and the Section on Preventive Medicine and Public Health at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

Some of these disturbing factors not only cannot be arrested, but are certain to continue in accentuated form. The diminution in the amount of disease brought about by the advances in medicine, which are to be credited almost wholly to physicians, are certain to continue and, we must hope, in ever increasing ratio. The excess of physicians in ratio to the population will be gradually lessened, in part by the transfer of some physicians to other fields of work, and, it is to be hoped, by a diminution or at least no increase in the number of medical students graduated each year.

The hospitalization of medical practice is increasing by leaps and bounds, and is certain to continue until even small cities and rural communities are provided with hospital accommodations for the care of a large part of those who are afflicted with serious illness.

Specialization in the several clinical departments of medicine is with us to stay, and is more likely to be intensified than lessened in the coming years. To the changes that are being wrought by these factors in the conditions of medical practice, the medical profession must reconcile itself and readjust its ideas and methods. The same may be said of the increased cost of medical education, although, so far as we can see, the amount of time required to secure a medical education has about reached its maximum.

Of the remaining factors, the one that most immediately affects the income of the practitioner is the fee table, and there is only one straightforward, businesslike way to deal with this, and that is for physicians in every community to advance the fees charged for their services to correspond with the increased cost of living, to be proportionate, on the one hand, to the large investment of time and money which the physician has expended in preparation for his life work, and, on the other, to be consistent with the ability of the patients in the physician's clientele to pay without unreasonable hardship. Any attempt of the family physician to increase his income by the surreptitious division of fees with the specialist, the doing of unnecessary operations, the rendering of any other service not really justified by the condition of the patient or by any means other than by methods which the physician would be willing to have practiced on himself, were he the patient, is certain ultimately to react to his disadvantage and to bring the medical profession into disrepute.

The various cults, fads and frauds have disturbed the equanimity of physicians to a much greater degree than is warranted by the facts. It is annoying in the extreme to know that the practitioners of these cults have been able to bamboozle the legislatures of several states to grant them special enactments in reference to medical licensure, but in the long run there is little reason to believe that the cults of our day really encroach on the work or income of the regular practitioners of medicine to any greater extent than did those of previous generations. And these encroachments were never of serious moment. If let alone, these medical vagaries invariably die a natural death.

As to the encroachment on the domain of the physician by the nurse, the social service worker and other outside agencies, these have been due for the most part to the fact that the physician has neglected certain fields of activity which were important and in which work needed to be done. All that is needed is a readjustment of the relations of the physician to the mem-

bers of these other groups, who are quite indispensable as aids to the physician, if the best results are to be accomplished. Such results cannot be obtained by the usurping of the physician's field by others who are not trained to do the work that belongs to him. No more can these results be obtained when the physician neglects these lines of activity.

In spite of these disturbing factors, the general practitioner or family physician continues to be in demand; he makes up the vast majority of the members of the medical profession in this country, and will continue to do so. He has had a difficult time of it, however, in seeking to adjust and readjust himself to these rapidly changing conditions. If the medical profession is to retain in the highest possible degree the confidence of the general public, it must recognize these changing conditions and alter its methods of practice accordingly. In doing this there are certain fundamental considerations on which, I think, all will agree:

A. The profession must constantly seek to meet the real needs and serve the best interests of the public.

B. Unquestionably, the greatest possibilities of usefulness of the physician to the public lie in the field of preventive medicine. The family physician who seeks to render to his patients the service which will do them the most good is bound to enter the field of preventive medicine: to become, in other words, the family health adviser as well as the family physician. It is not entirely, nor indeed for the most part, the fault of the physician that he has not given more attention to this matter in the past. His patients have sought him only when needing relief from pain or when seeking cure from disabling illness. The conception that positive health conducing to happiness, comfort and efficiency is something that can be had by going after it, that is, by observing sane, correct methods of living, is one that is just dawning on the minds of the vast majority of people. However, they are waking up very rapidly.

C. This matter of the health of the people of our nation is one that interests not alone the hundred and fifty thousand physicians, but also the remainder of the hundred and ten millions of people who make up our population. The idea that seems to be entertained by some physicians that the physician is the only man who is competent or has the right to discuss matters of health is wholly erroneous. He is better qualified to assume leadership in many phases of this movement, but it is the height of folly for him to decline to cooperate cordially and continuously with several other agencies that are working in this field. It is his right to insist that the activities of each of these groups of workers be confined to the domain for which their training has fitted them.

In some localities where there are no physicians who are willing or able to do certain kinds of work properly belonging to the practitioner of medicine, it must be undertaken by the nurse, the social service worker or some other individual, or it will be left undone. This is especially true of work along the lines of education of the general public, such as has been accomplished in so gratifying a degree by the antituberculosis organization and the infant welfare societies. For this particular and most important phase of public health work relatively few physicians of our day have had suitable preparation. It is not infrequently the case, even where there is a salaried county health officer, that the nurses and social service workers in that locality have had a better training for the education of the public than have the physicians. This should not be. In every phase of public health work, as well as in the practice of medicine, the physician should be the leader and director of all the activities looking to the maintenance of better health standards of that community.

The physicians of our own generation, if they are to realize their possibilities of usefulness to the communities in which they live, must equip themselves far better than they have been heretofore equipped to give instruction to the public concerning community and especially individual hygiene. They must cooperate cordially and effectively with the duly appointed health officers, not only in complying with the legal requirements as to the reporting of births, deaths, cases of communicable disease, and the like, but in the matter of arousing the citizens of the community to the importance and great possibilities of preventive measures.

Training of the family physician for such work can be accomplished only by a considerable amount of carefully planned, systematic, effective instruction along the lines of preventive medicine. We need extensive provision for continuation courses conducted by state or local health officers at convenient points and for such periods of time as will make it possible for the family physician to attend them without unreasonable interference with his practice.

At the same time, it is quite as important that the people be educated as to their duties and obligations to the community. They must come to understand that the service which the family physician renders in keeping his patients well is far more valuable than any which he renders in restoring the sick to health, and that he should be paid accordingly. For centuries, physicians have been expected to give this sort of advice offhand, in a street corner consultation, without fee of any sort. Needless to say, the physician cannot support his family and himself on the good will and gratitude of patients. He must be paid a reasonable fee for such services as the examination of the apparently healthy adult or child, for periodic advice in reference to diet, habits of work and play, habits and conditions of sleep, and many other matters; indeed, for any item of advice for which the physician is sought which has to do with the preservation and betterment of health. Such service is quite as valuable and as much or more time consuming and requires quite as broad a knowledge of the medical sciences as advice given to the sick who are seeking restoration to health. Especially in the case of children from early infancy through the period of school attendance can the physician's advice and instruction be of utmost value. By means of careful, periodic observation of these children and by conference with teachers and parent, and of advice to them, he has it within his power to determine often whether the future life of that child shall be healthy, sane, vigorous and happy, or quite the contrary. One thing is certain—the health officers, community, state and federal—are hopelessly handicapped unless they have the cordial, constant, sympathetic and intelligent cooperation of the physicians of that community.

For the coming generation of medical men, that is, the medical student of our day, the plan of education must be modified to stress the preventive side of medi-

cine much more than it has ever been stressed. This does not necessitate any radical change in the branches included in the curriculum. The practitioner of medicine must have a reasonably broad, comprehensive knowledge of medicine; first, of the fundamental sciences on which the practice of medicine is based, and then of the clinical applications of these sciences. The foundations to be laid in these sciences are essentially the same for preventive as for curative medicine. Somewhat more emphasis should be laid on those facts and methods of bacteriology and hygiene which have to do with prevention; but the important change that is needed is a change in attitude of the clinical teacher. He should emphasize much more than has ever been emphasized the discussion of why and how the patient fell ill or sustained a surgical injury. Who was responsible? How could it have been prevented? What steps should be taken to protect others from similar illness or injury? What is the relation of the family physician to the public health officer in the case of communicable disease? What does the law require of the physician in any particular case in his relation to the health officer? Quite outside the legal requirements, how can they cooperate to best advantage in protecting the community from the incidence of disease? More important still, how can they cooperate in bringing about the education of the public in the quest for positive health and greater efficiency? In brief, the medical faculty and especially the clinical teachers of every medical school should come to realize that the medicine of the future is to be in large part preventive medicine, and it is their duty to prepare their students for service along these lines.

The organized profession has been seeking the education of the public for some years by supplying information on health topics to newspapers, magazines, journals and other publications, by the preparation of pamphlets, through the medium of a Speakers' Bureau which supplied lecturers to various organizations, and by cooperation with other national organizations interested in a movement for better health, the American Medical Association has sought to educate the public to a better understanding of the purposes and ideals of the medical profession.

By the action of the House of Delegates at the meeting in St. Louis a year ago, a new agency has been placed in the charge of the council which promises to be the most effective of all. This is the establishment of *Hygeia*, a journal of individual and community health, published monthly, the first number of which was issued in April of this year. It cannot be too strongly emphasized to every member of the American Medical Association that this journal belongs to him. It was established by the action of his House of Delegates. He is a stockholder in *Hygeia*. It will succeed or fail in the accomplishment of the great purpose for which it was founded in direct ratio to the support which it receives from the members of this Association. The least which any member of the Association can do is to have a copy of each issue on his reception room table where it is accessible to his clientele. If, in addition to this, every physician will interest himself in securing a few subscribers among the people of his community, *Hygeia* can shortly be made to reach a very large audience. Given such an audience, and a journal which contains attractive, instructive and authoritative information about health and disease and about what the medical profession is seeking to do in promoting the health of the people, it has possibilities of usefulness far in excess of any measure that has yet been devised by the American Medical Association.

FUNDAMENTALS IN BONE TRANSPLANTATION

EXPERIENCES IN THREE THOUSAND BONE GRAFT OPERATIONS *

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It must be granted that surgical technic in all instances should be formulated and devised to meet the most unfavorable cases. This is particularly true in the case of the bone graft. Here the technic should be so devised that results may be had in cases of long-standing pseudarthrosis, and in satisfactory percentages in large numbers. The relative merits of different technics may not be disclosed in their application to a few cases, whereas in 1,000 cases, for instance, they would be forcibly apparent.

From the essential biologic, physiologic and mechanical standpoints, the technic and fundamentals of application should measure up to the following requirements:

1. The graft should be autogenous.

2. The graft should be so placed and contacted that conditions are favorable to the early and sufficient establishment of blood supply. This can best be accomplished by generous contact of the marrow of the graft with the marrow of the host bone by the Albee inlay.

3. Within limits, the graft should be the internal fixation agent. This can best be accomplished by the graft being of generous length and maximum diameter, thus bringing about a greater contact for the establishment of blood supply, as well as favorable conditions for fixation. The inlay type provides the maximum of immobilization, in that it is accurately and snugly incorporated into the substance of the host fragments.

4. Following the teaching of the centuries in comparative biology in the vegetable kingdom, such as the grafting of fruit trees, the graft should, when possible, be so inserted that corresponding cambium layers come in close contact, and should consist of all four bone layers.

5. The graft should be of such cross section and strength that it will resist fracture during and after the period of external support until osteogenesis of sufficient amount occurs. This important consideration is often undervalued. The following types of graft do not measure up to the foregoing requirements, and have frequently proved unsatisfactory: (1) the osteoperiosteal of Ollier and Delagenier; (2) the intermedullary (Murphy); (3) the pedicle graft (Cole), and (4) the ill advised application of the Albee sliding inlay.

These grafts have failed principally because they do not satisfy the necessary biologic, physiologic and mechanical requirements.

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The osteoperiosteal graft is inadequate because (1) it is not a complete physiologic osteogenetic unit; (2) owing to its lack of mechanical strength, it does not furnish mechanical fixation to the host bone fragments; (3) since it does not possess physical bone continuity and is incapable of bearing mechanical stress, its metabolism and cellular proliferation are not influenced by that powerful stimulus of successfully withstanding mechanical stress, since it does not function as the internal fixation agent, and (4) the usual technic in numerous applications in which it is employed is to place it on the outer surface of the bone cortex; in pseudarthrosis cases, especially, this means that the graft is inserted into cicatricial or nonvascular tissue, which furnishes an unfavorable environment for the graft. This is in strong contrast with the Albee inlay, in which the marrow substance of the graft is brought into close approximation with the vascular marrow of the gutter of the host fragments.

The intramedullary type of graft cannot be of large enough cross section and strength in any of the bones except the larger ones, such as the tibia and femur. It is also most difficult to insert where there are two bones, such as in the forearm. Then, again, it is not coapting the graft to the host bone tissues according to biologic principles, namely, cambium layer to cambium layer. And, in the third place, the preparation of the marrow cavity to receive the graft consists in reaming out all the vascular and active osteogenic tissue. Thus, the graft is inserted into a cylindrically shaped hole, the walls of which are nonvascular cortical bone, and furnish an unfavorable environment for the graft. And lastly, because of technical reasons, the fit, or approximation of the intermedullary graft surfaces to those of the host bone, can never be close or accurate, thus furnishing unfavorable conditions for blood vessels to extend early and profusely from host tissues to graft.

The pedicle graft has practically all the disadvantages of the osteoperiosteal graft, with the one exception of unusually favorable and ununited fracture of the lower jaw without loss of bone substances.

By the ill-advised sliding inlay (Albee) is meant the application of this type of technic to those cases in which, from osteoporosis or normal structure, the cortex of the fragments themselves is too thin and weak to furnish graft material strong enough to resist breakage. This dictum is always true in the case of the radius and ulna, and may be true in the case of pseudarthrosis in any bone. The sliding inlay is favorable in the case of the tibia or the femur.

The tibial inlay (Albee) is from every standpoint the ideal type of graft. It satisfies certain important biologic, physiologic and mechanical laws that have proved so essential in carrying out the same kind of procedure in the vegetable kingdom:

(*a*) It brings into the closest opposition the corresponding bone layers of the graft and the host fragments on each side.

(*b*) By its mortise or inlay contact, this inlay brings about a very potent fixation. This is a most important feature of the environment of a bone graft; it serves as an internal fixation agent as well as an active osteogenic influence, because osteogenesis is strongly stimulated by the mechanical stress brought to bear on the graft by internal fixation.

(*c*) The contact of the marrow of the tibial inlay throughout its whole length with the vascular marrow substance of the host bone brings about the most ideal condition for the early and profuse blood supply and the cellular content of the graft. Since the chief blood supply of the normal bone cortex comes by way of the marrow substance and medullary canal, the advantages of the technic in this respect are apparent, especially since the life of the graft cells depends on the early supply of sufficient nourishment to them.

(*d*) The marrow substances of the inlay graft should be in as large a quantity as possible, so that by being contacted with the marrow substance of both fragments, it, together with the periosteum, will furnish a vascular conduction and osteogenic bridge from one fragment to the other.

The technic of insertion of the inlay graft is much simpler and easier of execution than the medullary type of graft, although it is more difficult than the employment of the osteoperiosteal graft. Nevertheless, when my motor-driven instruments are used, the technic is not difficult.

Moreover, another reason for failure in this type of work, other than the type of graft, can be traced to the lack of proper armamentarium and inadequate experience with them. In work on the jaw, more than on any other part of the anatomy, great delicacy of technic is required. Further, owing to the lack of anvil stability, smallness of the jaw bones and their irregularity of contour, difficulties are presented which can be satisfactorily overcome only by the means of a large variety of motor-driven tools. The old-time use of mallet and chisel, or the osteotome, is a procedure not only difficult and time consuming, but one in which the same degree of efficiency is impossible. When these primitive instruments are used, the bone and soft tissues are traumatized both by contact with retractors, impact of cutting tools and by long exposure to air and drying on account of the operative time being prolonged; also, it is possible to get, speedily, accurate cabinet-maker fits only by means of automatic power-driven tools, such as the Albee "bone mill."

An additional advantage of the rapidly revolving saw may be found in certain phenomena strikingly illustrated in the World War. The laceration of nonvital tissues caused by the penetration of a slowly traveling (spent) projectile causes such a bombardment of the central nervous system by a storm of afferent noci-impulses that the smitten soldier drops in his track in a profound state of shock. On the other hand, when the same tissues are severed by a projectile traveling at high velocity (provided the vital centers are uninjured), the soldier walks on with scarcely any evidence of vasomotor disturbance. In the latter contingency, the nervous end-organs are severed by a cutting agent traveling at such speed that the nerve filaments are unable to deluge the central nervous system with a wave of afferent noci-impulses, because they are incapable of taking up such stimuli as is produced by a severing agent traveling at such speed. An analogous set of circumstances likewise involves a severance of nerve-endings—by a slowly moving hand saw or chisel, on the one hand, and a rapidly revolving motor saw, on the other.

By necessity, I began my early bone-grafting operations with hand tools, and after I had developed my motor-driven instruments, I found that shock had almost entirely disappeared in the course of operations of reasonable length. I am uncertain as to whether this absence of shock is to be attributed to anoci-association in accordance with Crile's theory or to a shortening of the time of operation brought about by motor-driven tools.

IMPORTANT CONSIDERATIONS IN APPLICATION AND TECHNIC OF THE BONE GRAFT

1. *Time to Operate.*—A careful study of the wound (if one formerly existed) should be made, before it has healed, if possible. The type of infecting organism (such as *Streptococcus hemolyticus* or gas bacillus), the nature of the "clean-up" operation, and the manner of healing of the wound should be noted. These observations have a direct bearing on determining the time when it will be safe to operate.

In a few cases it may be permissible to operate after the wound has been completely healed for a period of two months, while in others, on account of possible latent infection when the previous infection has been *Streptococcus hemolyticus*, or other bacteria, it may be advisable to delay the final plastic work for at least six months. In some of the latter unfavorable cases a two-step operative method may be followed, consisting of a preliminary excision of scar tissue with its replacement by a healthy skin-flap, muscle or fat, followed after a period of from ten days to two weeks by the bone plastic procedure, provided the wound healed kindly following the preliminary operation.

2. *Immediate Preoperative Observation of Patients Formerly Having Infected Wounds.*—In order to ascertain whether or not latent infection capable of recrudescence exists, splints should be removed, and rough manipulation and deep massage should be given for a period of from one to two weeks before operation. During this time, observation of the temperature should be made, and likewise a careful examination of the parts for evidences of local tenderness or of recrudescence of infection. The field of operation should be given a forty-eight hour preparation by the tincture of iodin technic.

3. *Plan of Operation and Choice of Incision.*—By roentgenographic and physical examinations, the proposed plan of operation, particularly with reference to the location of the graft, should be made before actual incision. If it is possible, the skin incision should not be located directly over the intended bed of the graft. The operation must be so planned that the graft may be covered without undue tension of skin, and, if possible, placed so that it may come in contact with healthy tissue instead of scar. In a number of cases in which this was accomplished, the graft healed in by primary union; whereas the skin scar, even at a considerable distance from the graft, broke down entirely. In cases in which there is extensive loss of bone, the scar tissue should be pushed to one side, in order that the graft may come in contact with healthy tissue. Drainage wicks of any kind must never be inserted at the time of the operation.

4. *Length of Operation.*—I believe that the shortest possible operating time that is consistent with good work, and with a minimum amount of trauma, is requisite to successful results in this work.

5. *Use of Motor-Driven Tools.*—These are essential: (*a*) on account of the necessity for rapid work in order to avoid drying and traumatization of both the graft tissues and the host tissues; (*b*) to secure a cabinet-maker fit of parts, thereby providing for early and adequate blood supply to the graft, for mechanical fixation and for the operation of Roux's law of frictional irritation, which is a great stimulus to bone growth, and (*c*) on account of taking advantage of the law of anoci-association.

The motor outfit with its tools to secure automatic fits seems indispensable in this work. The motor saw, when properly used, does not heat or glaze the bone. I have shown this repeatedly in experimentations made formerly and while doing an extensive amount of bone work during the last fifteen years.

6. *Adequate Length of Graft.*—The bone graft should always, if possible, be of the inlay type, and of sufficient length to extend into each fragment for a distance of at least 5 cm., and always well beyond the eburnated area at the ends of the fragments. The gutter should extend well into the healthy marrow of the host bone, with which the graft marrow should be in generous contact. It is important that the marrow in the fragment ends should not be crushed or unduly traumatized, and that the gutter in it should be of proper depth to just receive the graft, so that there will be a close approximation of the marrow of graft to the marrow of the host fragments, thus favoring the early and profuse anastomosis of blood vessels between these very vascular tissues. It is also important that a marrow bridge be formed from the marrow substance of one host fragment to that of the other, for the transmission of blood vessels, bone cells, etc., across the point of nonunion.

7. *Type of Graft.*—The graft should be autogenous, consisting of all four bone layers, namely, periosteum, complete thickness of cortex, endosteum and marrow. It should be so inlaid that the fit is perfect, with an exact apposition of layers of the graft to the corresponding layers of the host bone. This exact contacting fit favors the mechanical fixation of the fractured bone and the graft; it also permits the frictional stimulus to bone growth, emphasized by Roux, and in every way favors the earliest bony union of graft to host fragments.

8. *Supplemental Grafts for Additional Foci of Bone Growth.*—Small "sliver-grafts," about 1 mm. in thickness, placed alongside the main fixation graft, furnish additional foci of bone growth. They are most efficacious when used in this manner.

9. *The Graft as the Main Fixation Agent.*—Fixation should be secured always by the graft itself, and never by metal plates or other foreign material, for the metabolism of the graft and bone growth are directly influenced by the stimulation from the stress successfully carried by the graft.

10. *Suture Material.*—A minimum amount of absorbable suture material should hold the graft in place. For this purpose, kangaroo tendon is the ideal material, since it is tolerant to the tissues, readily absorbable, very strong and reliable. When advisable, the autogenous bone graft screw made at the operating table by the author's bone mill may be substituted for the kangaroo fixation sutures entirely, or it may be used as a supplemental fixation as well as an osteogenic agent. For the skin and the underlying soft parts, fine absorbable suture material should be used, such as 0 plain and chromicized catgut.

11. *Postoperative Fixation.*—Firm immobilization of the limb by a plaster-of-Paris cast should be maintained for a period of at least ten weeks following the operation, and as long thereafter as roentgenographic examination shows it to be required. Great emphasis should

be placed on the importance of very efficient, immediate postoperative fixation, and this can be accomplished only by the most expert management of a suitable fracture orthopedic table (such as the Albee fracture table) which will allow control of both the upper and lower extremities and skilful plaster-of-Paris technic.

I am convinced that failures in cases of pseudarthrosis in which operation was performed by others, in which the bone graft was used, were due many times more to inadequate postoperative fixation than to poor operative technic. This statement is especially true in cases with or without loss of bone substance in the upper two thirds of the humerus, where it is absolutely necessary to immobilize both the elbow and the shoulder joints by a plaster-of-Paris shoulder spica, and it was for this type of cases, more than for any other, that I devised the Albee fracture orthopedic table.

Adequate fixation of the graft, following its insertion, is equally essential in the same work in the vegetable kingdom, as study of the various means for these ends in such work as tree grafting will show.

Grafting wax is as necessary for this purpose as it is for protecting the cut surfaces of the tree or plant from vegetable parasites. It is for this reason that when the wax does not remain hard and becomes unduly soft under the sun's rays, successful results are interfered with, on account of the loss of fixation and the consequent movement of the graft in its bed by the wind or otherwise.

Attention is again drawn to the importance of using absorbable skin suture material, in order that the plaster-of-Paris dressing need not be disturbed until time for the splint to be removed.

40 East Forty-First Street.

ABSTRACT OF DISCUSSION

DR. CHARLES LEROY LOWMAN, Los Angeles: I can fully appreciate the point Dr. Albee makes regarding particularly the extension of the application of the fulcrum in relation to the hip joint.

DR. FRED H. ALBEE, New York: I had recently a case which is illustrative of the subject. A boy about 18 years old came to me. He had been born with two thumbs on one hand. In all of these cases one thumb is the functional one—the one with the full amount of metacarpal bone. The surgeon who first saw this case, unfortunately, amputated the good thumb, leaving the useless one, which had no controlling muscles. I transplanted the flail thumb onto the stump of the good thumb. The result is most gratifying, and the control of the thumb under the new condition is now very good.

The Libido.—Man has two fundamental instincts—one for self-preservation and the other for race propagation. The most important emotion of the self-preservation urge is hunger. The sole emotion of the race-propagation urge is libido. Libido is the energy which gives rise to the entire gamut of human activities. The character and personality of the individual depends upon the manner in which he acquires energy, converts it into libido, and releases it in procreation, in socially useful creations, in developing and maintaining a neurosis, or in perversions and crime. The person who is happily married, raising a family, handling his economic situation with success and who has the time and strength to spare for cultural improvement, is utilizing his libido in accordance with the highest psychanalytic principles. . . . Psychanalysis is the technic of discovering the hidden unconscious motive for behavior or conduct which is deleterious to the health and happiness of the individual.—Thompson: *U. S. Naval M. Bull.*, September, 1923.

COMPARATIVE MERITS OF NEW AND OLD PREPARATIONS OF DIPHTHERIA TOXIN-ANTITOXIN

RESULTS OF PRELIMINARY TESTS WITH TOXOID

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AND
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When the New York City Health Department laboratory workers first undertook to estimate the value of toxin-antitoxin in the practical immunization of children against diphtheria in 1914, it was essential to utilize an effective preparation. The ingredients of importance in such a preparation other than the antitoxin are the specific toxin that causes the production of antitoxin and the nonspecific products of bacterial growth and dissolution occurring in the cultures in which the toxin is produced. It is these nonspecific products that cause the local disturbance in sensitive persons. The antitoxin should be added in an amount just sufficient to lessen the excessive avidity of the toxin for the tissues and so prevent painful reaction, but the amount of antitoxin should not be enough to rob the toxin of its immunizing effect.

For a number of years previously, numerous animal tests had been carried out by Park with a mixture containing three L plus doses of toxin to each cubic centimeter, and sufficient antitoxin to reduce the toxicity so that an injection of 1 c.c. caused paralysis in the guinea-pig in about twenty-five days.

As we had studied this preparation and knew it to be efficient and safe, we determined to use it for the immunizing injections. The results were in every way satisfactory except for the rather excessive local reaction. This mixture became our standard preparation. However, with the increasing utilization of toxin-antitoxin not only in New York City but also throughout the country, we felt constrained to endeavor to remove as much as possible of the irritating substances in the mixture.

Dr. Banzhaf of our laboratory attacked this problem, but neither he nor other chemists have been able to separate the useless and annoying bacterial substances in the culture fluids from the valuable specific toxin. Despairing of success in eliminating the extraneous proteins from the specific toxin, we attempted to achieve our object by lessening the amount of both toxin and antitoxin in the mixture and so also the amount of the proteins. This was suggested to us by the reports of the Schick retests by Zingher on a number of children in the borough of Manhattan, and by Schroder on children in the borough of Brooklyn. A toxin of double the standard strength had been used on these children. The immunizing results, instead of exceeding those obtained with the standard preparation, were merely similar. As doubling the amount of toxin in the dose did not improve the effectiveness of the mixture, it seemed reasonable to try the effect of reducing the amount of toxin. We therefore tried mixtures in which the amount of toxin was one third, one sixth, one thirtieth and one sixtieth of the standard dose. The preparation (0.1 L + toxin) containing one thirtieth of the original toxin was finally selected as probably the best. A preliminary report of the observations

on 490 children on whom this mixture was employed by Schroder was given at the meeting of the American Public Health Association[1] in October, 1922. The results are shown in Tables 1 and 2.

TABLE 1.—*The Antitoxin Development Produced by Three Injections of Mixtures* Having Different Amounts of Toxin Partially Neutralized by Antitoxin*

Amount of Original Toxin in 1 C.c. of Mixture	Number of Children Receiving 3 Injections	Per Cent. of Nonimmunes Shown to Be Immune on Schick Retest Four Months Later
0.1 L+† (4 lethal doses)	493	80
0.5 L+ (20 lethal doses)	304	95
1.0 L+ (150 lethal doses)	310	92
5.0 L+ (300 lethal doses)	467	88

* All mixtures caused severe paralysis in guinea-pigs followed usually by death in eighteen days among those animals that received 1 c.c.: with 5 c.c. doses, death followed in ten days.

† The mixture is made by adding three-fourths unit of antitoxin to one L plus dose of toxin. The toxin and antitoxin should be diluted in cold water and the two solutions mixed immediately. If the toxin is diluted in water at room temperature, it deteriorates rapidly.

TABLE 2.—*Comparison as to the Amount of Local and Constitutional Reaction Caused by the New and Old Preparations in Children*

	New Preparation 0.1 L+* %	Old Preparation 1 to 5 L+ %
No local reaction	25	0
Slight local reaction	64	61
Moderate local reaction	11	27
Marked local reaction	0	22
Among those showing marked reactions there was a rise of temperature of from 1 to 5 degrees F., and other constitutional symptoms in	0	6

* If the 0.1 L plus preparation is underneutralized more than the amount advised, there will be a local reaction from the excess of toxin.

Because of these favorable results, it was decided to make the one-thirtieth (one-tenth L plus toxin) preparation the standard, instead of the three L plus mixture. Since then no other mixture has been used in our work in immunization except when we wished to make comparisons. The results of a comparative test in adults are given in Table 3.

effect on the toxin somewhat similar to the action of slight amounts of antitoxin. We thought it would be of great interest to compare the results of such injections with those obtained by the injection of the toxin-antitoxin. It happened that at this time we had a large number of adults to immunize. This enabled us to use the different preparations under comparable conditions. We utilized a toxin that had been stored after being diluted with salt solution and had thus been reduced to toxoid. This was carefully tested in guinea-pigs. We arranged also to give a small group three injections of standard toxin at the same time. The amount of toxin chosen was that used in the Schick test. Through a misunderstanding, the first dose given was four times this amount. The results of these various preparations are shown in Table 3.

The immunizing results in adults with the one-tenth L plus and the three L plus preparations were similar to those previously obtained in children (Table 1). The local reactions to both preparations were somewhat more severe than with similar preparations in the children (Table 2), but the amount of local reaction following injections of the one-tenth L plus mixture was strikingly less than that following the injections of the three L plus mixture. The slightly lesser immunity response of the one-tenth mixture is attributed to the fact that the toxin was slightly less neutralized. One group of adults received three doses of only 0.5 c.c. each instead of 1 c.c. of the mixture. Those individuals who received the smaller injections had nearly as much local reaction without as great an immunity response.

LOCAL AND IMMUNITY REACTIONS PRODUCED BY TOXIN AND BY TOXOID

The local reaction of an appreciable dose of standard toxin alone was too severe to make it an acceptable preparation for general use. On the other hand, as shown in Table 3, the deteriorated toxin (toxoid) gave a fairly satisfactory immunizing response with remarkably little local reaction. We hope in the near future to carry on further tests with the diphtheria toxoid

TABLE 3.—*Local Reaction on Second Day and Immunity Response at the End of Three and One-Half Months from Toxin-Antitoxin, Unmodified Toxin and Toxoid**

Preparation Used	Three Doses of, C.c.	Adults Tested	Severity of Local Reaction: Very Marked, %	Marked, %	Moderate, %	Slight, %	None, %	Immunity Response After 3½ Months: Schick Negative, %
Toxin-antitoxin:†								
5.0 L+ in 1 c.c.	1	261	13	36	22	12	17	87
0.1 L+ in 1 c.c.	1	117	..	10	20	44	26	83
0.1 L+ in 1 c.c.	0.5	86	..	8	23	45	24	72
Freshly diluted standard toxin without antitoxin:								
0.15 M. L. D. in 1 c.c. 1st dose	1	291	8.5‡	241	451	24	2.5‡	
0.025 M. L. D. in 1 c.c. (2d and 3d doses)	1	79	...	4	9	25	62	48
Toxoid § (old and much deteriorated toxin)	1	211	...	3	10	37	50	70

* This table was given in the preliminary report read at the meeting of the Association of Pathologists and Bacteriologists in March, 1923.

† Average toxicity when injected in guinea-pigs weighing 250 gm.: 5 L plus in 1 c.c. = death in 23 days; 0.1 L plus in 1 c.c. = death in 20 days.

‡ The local reaction continued to increase after the second day instead of decreasing as it does with properly standardized toxin-antitoxin or toxoid.

§ One cubic centimeter caused late paralysis in guinea-pigs.

TOXOID

In the first experiments on antitoxin production in animals by von Behring and his associates, the diphtheria toxin was modified by exposure to iodin so as to reduce its toxicity. The action of the iodin or of other agents that cause a lessening of the toxicity and reduce the toxin to a form called toxoid produced an preparations. It is evident that fresh toxin must either be modified by antitoxin or partially broken down by some chemical or physical agency, so as to lessen the avidity with which it attacks the tissues; otherwise, the local reaction of the tissues is so severe that the amount of toxin injected has to be reduced to a dose so small that the immunity response in those who have no antitoxin will be very much less than when the usual dose of toxin-antitoxin or toxoid is used.

1. Park, W. H.; Schroder, M. C., and Ziegler, Abraham: Am. J. Pub. Health 13: 23 (Jan.) 1923.

IMPORTANCE OF A SUITABLE DEGREE OF NEUTRALIZATION OF TOXIN IN TOXIN-ANTITOXIN MIXTURE

There has been considerable difference of opinion among investigators on this subject. Park and Banzhaf[2] will soon make a final report on a large number of observations obtained from guinea-pig experiments. We report here the result of the retests on more than 2,000 children, on some of whom preparations of standard toxicity were used and on others preparations of somewhat insufficient toxicity (Table 4).

TABLE 4.—*Immunity Results in Children After Three Injections of Toxin-Antitoxin Mixtures of Different Degrees of Neutralization*

Preparation No.	Toxicity in Guinea-Pigs: Dose	Toxicity in Guinea-Pigs: Result	Number of Children Injected	Immunity Response After 4 to 6 Months Schick Negative, per Cent.
1	1 c.c.	Death in about 17 days	131	92
	5 c.c.	Death in 4 to 5 days		
2	1 c.c.	Death in about 17 days	289	92
	5 c.c.	Death in 5 to 8 days		
3	1 c.c.	Death in about 21 days	798	91
	5 c.c.	Death in 5 to 6 days		
4	1 c.c.	Marked paralysis of animal followed by recovery	608	87
	5 c.c.	Death in about 17 days		
5	2 c.c.	Marked paralysis of animal followed by recovery	127	88
	5 c.c.	Death in about 22 days		
6	2 c.c.	Marked paralysis of animal followed by recovery	763	76
	5 c.c.	Death in about 25 days		
			2,704	

It is noticeable that, while the ideal preparations gave the best results, those preparations approaching considerably nearer to complete neutralization still yielded fair results. Therefore, although it is important to have preparations of a proper degree of toxicity, it is valuable to know that less toxic preparations will give in the majority of children sufficient antitoxic immunity response.

TIME INTERVAL BETWEEN INJECTION OF TOXIN-ANTITOXIN AND DEVELOPMENT OF ANTITOXIN IN SUFFICIENT AMOUNT TO INSURE IMMUNITY

It is necessary to make a retest for the Schick reaction if we desire to know positively whether the immunizing injections have given complete protection. Although it is desirable to make these retests as soon as possible, we defeat our purpose if they are made before the majority of the children have had time to react. The results obtained in about 4,000 retested children are given in Table 5.

TABLE 5.—*Comparison of Schick Retest Results at Different Intervals After Immunization*

Interval	Number of Retests	Per Cent. Immune
3 to 3½ months	579	82.7
4 months	1,427	84
5 months	1,302	85.7
6 months	1,059	89
	4,367	

These results indicate that although longer periods give somewhat more favorable results, retests may be made satisfactorily at any time after three months. The children tested at these intervals had received identical toxin-antitoxin preparations.

2. Park and Banzhaf: Preliminary report, read at the meeting of the Association of Pathologists and Bacteriologists, March, 1923.

While the observations reported in this paper were being made, certain facts were noted that are of considerable clinical interest. These are the interval of time after the injection at which the intensity of the local toxin-antitoxin reaction is at its greatest, and the duration of the reaction. These observations are given in Tables 6 and 7.

TABLE 6.—*Comparative Intensity of Local Reaction Twenty-Four and Forty-Eight Hours After Toxin-Antitoxin Injections*

Greatest Intensity of Reaction	Total Number of Persons Observed	Number Having Greatest Intensity of Reaction at: 24 Hours	48 Hours	Same at 24 and 48 Hours
Very marked	23	..	4	19
Marked	31	6	9	16
Moderate	15	4	6	5
Slight	21	..	20	1
Totals	90	10	39	41

TABLE 7.—*Comparative Intensity of the Local Reaction at End of Two, Five and Sixteen Days, in Three Hundred Cases Assembled Equally from Persons Showing Marked, Moderate and Slight Reactions*

Time of Inspection	Severity of Reaction: Marked	Moderate	Slight	None
End of 2 days	100	..	..	..
End of 5 days	4	31	19	46
End of 16 days	..	..	7	93
End of 2 days	..	100	..	..
End of 5 days	..	11	26	63
End of 16 days	..	..	7	93
End of 2 days	..	..	100	..
End of 5 days	..	..	12	88
End of 16 days	..	..	..	100

As shown in the table, the local reaction subsides gradually after reaching its height on the first or second days.

CONCLUSIONS

The new preparation of toxin-antitoxin, with its smaller amount of toxin, possesses a distinct advantage over the earlier preparation recommended by us, in that the local inflammatory reaction sometimes developing after an injection is less severe and less frequent. Indeed, it is almost negligible in young children and infants. The two preparations have equal immunizing value.

The toxin-antitoxin mixture should not be too toxic; that is, too much underneutralized; if it is, the local reaction is disturbing. It should not be too nearly neutralized by antitoxin, for then the immunizing results are less. Safe limits as to toxicity are that 1 c.c. should not produce death in the guinea-pig in less than fifteen days on the average, and 2 c.c. should not fail to produce marked paralysis.

Antitoxin is added to diphtheria toxin solely for the purpose of robbing it of its irritant action on the local tissues and thus allowing a larger dose of the modified toxin to be injected. The same result may be obtained by partially breaking down the toxin to toxoid.

Unmodified standard toxin, such as is used in the Schick test, is so irritating that only minute doses can be used. Even these minute amounts have some immunizing value. Up to the present time, the addition of antitoxin to toxin gives us the best immunizing preparation.

The new preparation of toxin-antitoxin is somewhat less stable than the original preparation, but it is suffi-

ciently stable to be used for six months after it has been properly standardized, if it is kept cool.

The use of the Schick test to determine the immunizing results of the toxin-antitoxin injections should not be approved of before the end of the third month, and preferably not before the end of the fifth month. This is because the immunizing response is a gradual one and requires for its completion a different period of time in each individual.

The local reaction which sometimes follows the toxin-antitoxin injections reaches its height on the first or second day, and then rapidly declines.

THE DIFFERENTIATION OF NORMAL AND PATHOLOGIC HUMAN THYROID GLANDS BY SEROLOGIC METHODS

PRELIMINARY REPORT *

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AND
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Since Bubnow, Gourlay, Baumann, Notkin and others published the results of their researches, the normal thyroid gland has been the subject of almost innumerable studies. Its anatomy, physiology and biochemistry have been and still are being investigated from many points of view. Very few men, however, have studied the pathologic thyroid in other than a clinical way, and no attempt has been made to demonstrate by well controlled experiments the difference, if such a difference exists, in the secretion of the normal and abnormal gland.

In May, 1922, a series of experiments was begun, which, it was hoped, would show conclusively whether or not the substances secreted by the abnormal thyroid gland varied to any extent from the secretions of the normal gland. As it was realized that the chemical analysis of protein has not been sufficiently developed to determine any differences in substances as closely related as these must be, it was decided that serologic methods would be used, primarily because of the delicacy with which such methods are known to differentiate between proteins.

The complement-fixation reaction was selected, not only because of the ease with which the results can be determined, but also because of the accuracy of the results so obtained. Obviously it was necessary, before this reaction could be employed, to determine whether or not the extracts obtained by the methods to be used were antigenic. As a matter of fact, it has been necessary to begin with very elementary experiments, for we have failed to find reference in the literature to the serologic reactions of thyroid extracts.

Extracts made from normal thyroid glands of pigs were injected into rabbits, and the serum thus obtained was found to be capable of deviating complement in the presence of homonymous antigen. This encouraged us to continue further, with the result that extracts made from normal human thyroids were found to react in a manner similar to the extracts obtained from normal pig thyroid gland.

Extracts were then made from pathologic human thyroids, adenomas being selected because of the ease with which normal glandular tissue could be removed. The serum obtained by injecting the latter extracts into normal rabbits was likewise found to be capable of fixing complement in the presence of the homonymous antigen.

The latter group of experiments has been doubly controlled in that the serum obtained by immunizing rabbits with extracts obtained from adenomas was used not only with adenoma extract as antigen but also with the extract obtained from normal human thyroids, as well as with normal human serum, with the result that only in the presence of the extract from human adenomas was there a definite fixation of complement.

Complete data on these experiments will be published later. We are at present engaged in further control tests; but the results so far obtained indicate a demonstrable difference in the extracts of normal human thyroids and those of adenomas. If these results are confirmed by subsequent investigations, we anticipate conducting similar studies with specimens obtained from pure uncomplicated cases of thyroid hyperplasia.

* From the Department of Surgery, University of California Medical School.

BERIBERI AND RICE NEURITIS

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Problems concerning the study of beriberi in its relation to the experimental investigations in animals maintained on deficient diets still offer great interest. In Japan, where many cases of beriberi are encountered every year, the study of this disease, together with that of the nature of vitamins and avitaminosis, is carried on very diligently so that in every biannual meeting of the Beriberi Investigation Committee under the auspices of the Department of War we are made acquainted with numbers of new investigations, which are freely discussed from all sides.

On account of our advantageous opportunity for the study of human beriberi in comparison with the so-called polished rice disease in experimental animals, a short report on the research work in Japan may be of some value. The results of these researches have appeared, however, in numerous publications extending over many years, so that it will be possible merely to summarize the general results without going into details.

Since the publication of Eijkman's famous experiment of 1896 in Java, in which he stated that after feeding fowls with polished rice a certain polyneuritis (polyneuritis gallinarum) is produced, which may be cured or prevented by giving rice bran, many repetitions of his experiments have been carried out by several authors, all confirming his results. Eijkman, however, was of opinion that these experimental disturbances in fowls are to be identified with human beriberi, and many other investigators have agreed in this respect with him. The principal reasons for their assertion seem to have been based on the fact that the main change in both man and fowl is the polyneuritis; the occurrence of beriberi is in close connection with a diet of polished rice, and both beriberi and rice neuritis of fowls may be cured or prevented by administering rice bran. Another Dutch investigator, Grijns (1901), fur-

ther studied this active substance in bran and found that it exists also in Catjang-idijo, a small bean; that it is water-soluble and is destroyed by heating at 120 C., and that it has particular effects indispensable to animal life which can never be produced with other nutriments, inorganic salts or water. Funk (1911) named this substance "vitamin," and asserted that the rice disease and beriberi are equally avitaminoses, and that human pellagra, rickets, osteomalacia, scurvy, keratomalacia and other diseases may also be defined as avitaminoses consequent on deficiencies of different kinds of vitamins. Funk's report has roused much interest all over the world, so that vitamins and avitaminosis have now become subjects of investigation everywhere. In America, also, we know of this problem through leading investigators, Osborn, Mendel, McCollum and others.

It seems to be the current opinion of Dutch investigators, as well as of many others, that beriberi can be identified with the rice disease of fowls, but I, with some other investigators, doubt this. My many years' studies on human beriberi, and the results of experimental study of the rice disease of fowls and mammalia, especially those exhaustive labors of Professor Ogata and his co-workers in our laboratory, extending over a number of years, give me a firm foundation for this statement.

BERIBERI AS DISTINGUISHED FROM RICE DISEASE

Not only from the epidemiologic point of view, but also in clinical and anatomic features, beriberi may be distinguished from the rice disease as follows:

Clinically.—1. Anemia is observed in rice disease; i. e., in experimental avitaminosis and hypovitaminosis, according to the reports of Ogata and of McCarrison. This is not the case with beriberi.

2. Lymphopenia is observed in rice disease, as confirmed by Cramer and Ogata. In beriberi this is never the case; on the contrary, a certain degree of lymphocytosis is a frequent finding.

3. In rice disease, emaciation in consequence of denutrition is a common symptom. No atrophy is observed in beriberi, except in chronic cases.

4. Hyperglycemia is common in rice disease, especially in fowls, as ascertained by Funk, Ogata, Tazawa, Shinoda, Shimazono and other workers. This is not the case with beriberi.

5. There are symptoms in the nervous system worthy of special mention. In rice disease, we observe, besides paresis, also jactication, ataxia and often coma. This is not true of beriberi. These symptoms cannot be explained merely as due to the peripheral neuritis; they must at least be ascribed to disorders in the central nervous system. As polyneuritis in animals, especially in fowls, may be produced by other causes, we must not consider it peculiar to beriberi; the cause of the latter is not necessarily identical with that of the polyneuritis.

6. If we feed animals with food lacking in quantities of vitamin B, we are able after the lapse of a fairly long period, to produce in them a state termed hypovitaminosis by Ozeki. The symptoms of this, developing after a prolonged incubation period, differ greatly from those of human beriberi, the principal symptoms being anemia, lymphopenia and hyperglycemia. Ogata described it as the preneuritic or hyperglycemic stage. When neuritis becomes apparent, the end-stage of the disease has been reached, and death follows in a few days (Ogata).

7. In beriberi, cardiac symptoms develop, accompanied by disturbances of the circulation of the blood, especially evident in the venous stagnation, which is never found in rice disease.

8. Loss of appetite and disorders of the intestinal tract are common in rice disease, but in beriberi they are not pronounced, although marked constipation is a common complaint.

Anatomically.—1. Distinctive changes in the heart of patients with beriberi are dilatation and hypertrophy of the right ventricle. This is not the case with rice disease; rather, in the latter we often detect atrophy of the heart in contrast to beriberi.

2. The lung in beriberi is voluminous, and general passive congestion is a common finding; in chronic cases, even pigmented cells or the so-called *Herzfehlerzellen* of German writers occur in air cells of the lung. These changes are not found in rice disease.

3. In beriberi, we find everywhere chronic passive congestion, which is most pronounced in the liver and the kidney, contrary to rice disease. Necrosis in the liver (Nagayo) and the kidney (Yamagiwa) are often encountered in beriberi, and, especially in the cardiac form of beriberi, we can detect fat and glycogen deposit in the liver (Nagayo).

4. Rice disease, and especially hypovitmainosis, is accompanied with anemia, contrary to beriberi. In consequence of this, a pronounced siderosis takes place in the spleen and the liver.

5. The lymphatic system is also in an entirely different state in the two diseases. Though in rice disease regressive metamorphosis or atrophy in accord with the leukopenia are constant findings, in beriberi swelling of the lymphatic apparatus is frequently encountered. The status thymicolymphaticus is sometimes found in the acute form of beriberi and in the beriberi of infants (Nagayo).

6. I have already reported that hypertrophy of the medullary substance of the suprarenals, with increase in the chromaffin reaction, occurs in some cases of beriberi, especially in grave cardiac forms. This has been confirmed by some authors, and a distinct increase in epinephrin content was also proved after quantitative measurements by Ohno. In rice disease, hypertrophy of the cortical instead of the medullary substance is common, but as to the epinephrin content authors differ in opinion, some asserting an increase (McCarrison, Oka), others (Suto, Go) denying it. Commonly, we cannot detect hypertrophy of the medullary substance or increase in the chrome reaction in rice disease.

7. As to the lesions of the nerves, Honda carried out a careful investigation in our institute. In the peripheral nerves, the changes found in beriberi and rice disease are similar. As these changes, however, may arise in man and animals under other conditions, for instance, in various intoxications and in metabolic diseases, one must be guarded against identifying the two diseases on the basis of these lesions.

From these facts is seems difficult and unwarranted to consider beriberi as identical with the avitaminosis or hypovitaminosis of animals.

Furthermore, it is altogether appropriate to consider the rice disease as an avitaminosis, because of the fact that in the animal suffering from rice disease, the amount of vitamin B contained in the tissue and organs is remarkably diminished as compared with the normal state. In beriberi, however, no decrease of vitamin is noticed. These conditions, as well as the results obtained by Ogata in his experiment of curing avitaminosis, would also give us another reason to distinguish beriberi from rice disease.

Moreover, I am in a position to emphasize another important point in solving this problem. A condition similar to experimental rice disease exists also in human beings. It is a peculiar form of farinaceous malnutrition (*Mehlnährschaden*), and may occur in badly nourished infants of the poor, who are continually fed with solutions of polished rice powder. With us it is called Chichiko dyspepsia. It is now rarely encountered in consequence of progress in pediatrics. I have examined two of these rare cases anatomically. The findings in the organs coincide in every respect with those of rice disease, showing wasting, anemia, siderosis, atrophy of lymphatic apparatus and thymus, and other

conditions. The recently discussed alimentary anemia is presumably the same as our Chichiko dyspepsia.

For such reasons, I think it is proper to conclude that beriberi must be distinguished from rice disease, while a condition which is similar to rice disease may also to be found in human beings in Chichiko dyspepsia.

I dare not, however, say that beriberi has nothing to do with a rice diet or with vitamin deficiency in food. It is quite probable that the eating of rice as the main diet may in itself contribute a factor to the occurrence of beriberi, and administering vitamin B may produce good results in preventing or curing beriberi. Therefore, the close connection between beriberi and rice eating or vitamin deficiency is beyond doubt, and it is evident that rice disease is in itself an avitaminosis; but I wish to emphasize that I cannot agree with the opinion that human beriberi is altogether one and the same with rice disease, as observed in experimental animals.

The real cause of beriberi can probably be explained by admitting one or more factors to the etiologic agents of rice disease in animals. And the determination of this factor will be the most important subject of further investigations in the problems of beriberi.

THE THERAPEUTIC VALUE OF TYPE I ANTIPNEUMOCOCCUS SERUM *

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Despite the excellent results of treatment of Type I lobar pneumonia with antipneumococcus serum which have been reported by Cole,[1] no final agreement as to the value of the procedure has been reached by clinicians. Approximately 1,000 treated cases are now on record in the literature.[2] They have been reported, for the most part, in small groups, and the mortality rates have varied from 0 to 27 per cent. Each observer is naturally influenced by his own series, and, in fact, in certain quarters skepticism seems to exist as to the real value of the serum.

It is obvious that with the criterion of success which has hitherto been relied on, namely, the degree of reduction in the gross mortality of treated Type I infections, a huge number of cases will have to be collected before the matter will be settled to the satisfaction of every one. At the present rate, years may elapse before an adequate series will be on record, and it seems highly desirable to obtain data on the value of the serum from other points of view.

If one studies the natural history of lobar pneumonia, the outstanding feature is the abrupt turn either for better or for worse which usually takes place at a certain stage of the disease. In the majority of cases, from five to nine days after the onset, it suddenly becomes apparent that the patient is either about to recover or has gone into collapse. During the preceding days, even if the reaction is severe, there is no way of discovering by clinical observation what the outcome will be. Were there some means of determining in this precritical period the probable mode of termination, it might be possible to evaluate better the effect of serum treatment in the individual case.

A great amount of work has been done on the development of antibodies in patients with lobar pneumonia. A review of the literature may be found in Clough's paper.[3] While the occurrence of agglutinins, opsonins and bacteriotropins, has been reported by a variety of workers, it is notable that such "substances" appear only at or about the time of the crisis, and hence a consideration of them early in the disease is of no use from a prognostic standpoint. Rosenow [4] studied the exudate from consolidated lungs obtained during life by lung puncture, and found that, in cases in which the patients recovered, the viable pneumococci in the aspirated material diminished rapidly as crisis was approached. From the fatal cases, on the other hand, huge numbers of organisms were uniformly obtained. Thomas and Parker,[5] using a similar method of study, found that the death of the organisms in the lung might occur several days before crisis. In forty-two cases in which the lung puncture was "positive," the mortality was 43 per cent.; in thirty-one cases with "negative" lung puncture, the mortality was 6.45 per cent.

With these observations in mind, it was hoped that some simpler criterion might be found which would be of prognostic import. A large number of histories of patients with lobar pneumonia from the records of the Johns Hopkins Hospital were therefore studied. It was soon apparent that neither the degree of pulmonary involvement, the blood count, the temperature, nor the care before entry were of material value in predicting the outcome of individual cases. A survey of the blood culture findings, however, yielded information which forms the basis of the present note.

It is well known that a high percentage of pneumonia patients who have positive blood cultures die, whereas those whose blood remains bacteria free throughout the course of the disease, for the most part, recover. This matter was studied in detail several years ago in the Johns Hopkins Clinic.[6] Daily quantitative blood cultures were made in a series of cases of lobar pneumonia, and the course of the bacteremia was noted in relation to the outcome. It was found that practically every death was associated with the presence of great numbers of pneumococci in the blood, and also that such overwhelming terminal bacteremias might be preceded by very slight blood invasions at a time when clinically the patient still seemed in excellent condition. It is evident, therefore, that as long as the blood is sterile, the issue of the case may usually be regarded as an open one—no critical phenomenon determinative of outcome has necessarily taken place. On the other hand, the presence of organisms in the blood, even if few in number, may indicate that a collapse of the defensive mechanism is already under way, and that, in a sense, the patient is doomed.

With this point in mind, 260 blood culture reports from 198 typical cases of acute lobar pneumonia have been analyzed in regard to the relationship of blood invasion and day of disease to outcome. The cases were taken from the hospital records without selection, and cover a period of ten years from 1913 to 1923. All the blood cultures that are tabulated were made at least one day before death, or one day before clinical phe-

* From the Biological Division of the Medical Clinic, Johns Hopkins Hospital and University.

1. Cole, R. I.: Nelson Loose-Leaf Medicine, 1, 1920.
2. Locke, E. A.: Treatment of Type I Pneumococcus Lobar Pneumonia with Specific Serum, J. A. M. A. 80: 1507 (May 26) 1923.
3. Clough, P. W.: Bull. Johns Hopkins Hosp. 30: 167 (June) 1919.
4. Rosenow, E. C.: J. Infect. Dis. 8: 500, 1911.
5. Thomas, H. M., Jr., and Parker, F., Jr.: Results of Antemortem Lung Punctures in Lobar Pneumonia, Their Bearing on the Mechanism of Crisis, Arch. Int. Med. 26: 125 (July) 1920.
6. Sutton, A. C., and Sevier, C. E.: Bull. Johns Hopkins Hosp. 28: 315 (Oct.) 1917.

nomena indicative of recovery were manifest. The results are shown in Table 1.

The part of Table 1 dealing with the eventual outcome of cases in which the blood cultures were previously negative is especially to be considered. It is seen that a negative blood culture early means

TABLE 1.—*Mortality Statistics of Lobar Pneumonia in Relation to Blood Culture Findings on Various Days*

	Positive Blood Cultures			Negative Blood Cultures		
Day of Disease	Total Cases	Died	Mortality Percentage	Total Cases	Died	Mortality Percentage
2	2	0	0.0	11	3	27.3
3	7	7	100.0	20	9	20.0
4	9	3	33.3	22	6	27.0
5	13	8	61.5	20	3	15.0
6	14	6	43.0	23	5	19.2
7	10	6	60.0	23	4	14.2
8	8	6	75.0	21	1	4.7
9	9	4	44.4	20	0	0.0
10	8	4	50.0	9	1	11.0
Average			55.5			16.1

nothing save that at that time the issue is still an open one, and that the mortality rates correspond with the total rates for larger series of pneumonia cases. The patient may continue his course to recovery without bacteremia or he may later suffer a blood invasion and die. However, if the blood culture remains sterile until the sixth or seventh day, there is much less likelihood of its later becoming positive, and the recovery rate is considerably greater.

The bearing of these observations on the theory of serum therapy is obvious. Many physicians believe that, to be effective, the serum must be given during the first three days of the disease. Theoretically, this view appears erroneous. The serum, to be most effective, should be given, to be sure, before the critical turn for the worse has taken place, but, from the figures presented, it is seen that as long as the blood culture remains negative, the patient's chances of recovery improve and do not decline as the disease progresses; hence one would expect to see the greatest benefit from therapy regardless of the day of disease, provided the blood was still sterile, whereas less benefit would be expected in cases with bacteremia, even if treated on the second or third day.

To verify this idea, the cases treated with serum in the Johns Hopkins Hospital are tabulated in a similar way to the untreated (Table 2). The total number is small, but the results seem striking enough to justify conclusions. It appears that no patient who received serum at a time when the blood culture was negative—regardless of the day of disease—died, whereas the results were no better in patients with blood invasion than in a similar group of untreated controls. There were, however, in the series certain individual cases with bacteremia in which the patients apparently were saved by serum therapy.

TABLE 2.—*Mortality Statistics of Type I Cases in Relation to Day of Disease, Blood Culture Findings and Serum Treatment*

	Positive Blood Cultures						Negative Blood Cultures					
	Treated			Untreated			Treated			Untreated		
Day of Disease	Cases	Died	Mortality Percentage	Cases	Died	Mortality Percentage	Cases	Died	Mortality Percentage	Cases	Died	Mortality Percentage
1	..	..	....	..	..	....	..	..	....	..	..	....
2	2	2	75.0	..	..	....	1	0	0.0	1	0	0.0
3	1	0	0.0	..	..	....	6	0	0.0	4	2	50.0
4	2	1	25.0	2	0	0.0	4	0	0.0	2	1	20.0
5	3	2	75.0	5	3	60.0	3	0	0.0	3	0	0.0
6	2	2	100.0	6	3	50.0	..	0	0.0	5	1	20.0
7	2	1	50.0	3	3	100.0	2	0	0.0	4	1	25.0
8	1	1	100.0	2	1	50.0	2	0	0.0	2	0	0.0
9	..	..	....	..	..	....	1	0	0.0	2	0	0.0
10	..	..	....	..	..	....	..	..	....	1	0	0.0
Average			75			55			0.0			16.5

To verify this idea, the cases treated with serum in the Johns Hopkins Hospital are tabulated in a similar way to the untreated (Table 2). The total number is small, but the results seem striking enough to justify conclusions. It appears that no patient who received serum at a time when the blood culture was negative—regardless of the day of disease—died, whereas the reaction which is lethal despite serum therapy, although undoubtedly certain cases in this group can be saved as well.

COMMENT

The fundamental experiments on which the treatment of lobar pneumonia with serum are based show that after the infection has progressed beyond a certain point, no amount of serum will save the infected animal. Evidence is collected here which seems to show that an analogous state of affairs exists in pneumonia in man, and that the best indication that the case is still favorable for treatment is the absence of bacteremia and not the day of the disease. Furthermore, the mortality figures on this basis bring out, in a much more striking way, the therapeutic value of the serum than general gross mortality statistics.

CONCLUSIONS

1. The occurrence of bacteremia in relation to the day of disease affords an index for prognosis in lobar pneumonia.

2. As long as the blood culture is negative, spontaneous recovery is possible in the majority of cases.

3. In the present series, the percentage of recoveries of patients treated with serum at a time when the blood culture was negative was 100, regardless of the day of disease.

4. Bacteremia in the majority of instances of lobar pneumonia indicates, on the other hand, a type of

5. In summary, it is believed that the present study reinforces the view that Type I antipneumococcus serum is of real value. The serum appears indicated in all cases, regardless of the day of disease, save those in which an overwhelming bacteremia is present.

Heredity and Crime.—It seems, therefore, that we can regard the hereditary constitution of the criminal as having at most but an indirect influence. The family temperament, first manifested in the lawlessness of his parent, is not, of necessity, a specifically criminal endowment, hereditary as such, but a more general condition, analogous rather to the congenital enfeeblement of intelligence or physique—extreme degrees of common weaknesses to which we are all more less susceptible in a minor measure; such weaknesses, when excessive, may favor moral lapses in later life; they in no way constitute a fatal or inexorable impulse toward them.—Cyril Burt: *Brit. J. Med. Psychol.* 3:15, 1923.

SUGAR TOLERANCE TESTING

IMPORTANCE OF BLOOD SUGAR CURVE DURING THE FIRST HOUR AFTER GLUCOSE MEAL *

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AND
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Woodward Fellow in Physiologic Chemistry
PHILADELPHIA

It has long been recognized that alimentary hyperglycemia may reach its maximum in considerably less than one hour, and that if the first estimation of blood sugar is made only at this time, the peak of the rise may be missed. Jacobsen [1] pointed out that in normal persons an increased blood sugar content might be present within five minutes of a 100-gram glucose meal, and that the highest figures were usually obtained in thirty minutes. In seven cases, the blood sugar had fallen to its original level in one hour. Graham [2] found increased values as early as ten minutes, and maximal values from twenty to thirty minutes after the glucose meal. Hopkins [3] and Hamman and Hirschman [4] made blood sugar estimations at fifteen-minute intervals after glucose ingestion, and obtained the highest percentage, as a rule, at thirty minutes. Bailey [5] found a rapid increase and decrease in blood sugar in cases of uncomplicated mild diabetes, of dyspituitarism, and in some cases of hyperthyroidism and of renal glycosuria. The curves in these cases, as in normal persons, usually reached their maximum under one hour, and at one hour were often fairly low. Bailey concluded that tests of alimentary hyperglycemia, if made at one-hour intervals, had little clinical value, since the blood sugar figures an hour after glucose ingestion might be the same in patients with renal glycosuria, early diabetes and in normal persons. Goto and Kuno,[6] estimating the blood sugar at twenty-minute intervals after glucose feeding, obtained maximal figures at forty minutes. Freidenwald and Grove [7] found the fifteen-minute sugar curve crest at forty-five minutes in the majority of normal persons, as well as in patients with carcinoma of the gastro-intestinal tract. Gray,[8] in a study of blood sugar at one-half hour intervals after glucose in a large series of normal persons, obtained the highest values at thirty minutes. Other observers might be cited.

It seems to be well established, therefore, that the hyperglycemia following glucose ingestion in normal persons usually does, and in certain diseases may, reach its maximum in from thirty to forty-five minutes. Yet this fact seems to be quite generally disregarded. The literature abounds in blood sugar curve studies in which the first blood sample is taken an hour after the glucose meal. In many instances, direct reference is made to the technic of Janney and Isaacson.[9] These authors recommended a uniform procedure for testing alimentary hyperglycemia, with the use of a glucose dosage apportioned to the patient's body weight (for each kilogram of body weight, 1.75 gm. of glucose, is given, dissolved in 2.5 c.c. of water per gram of glucose), the blood sugar being estimated before the glucose meal and at hourly intervals thereafter. Yet in a table giving the results in a series of their patients whose blood sugar was studied at thirty-minute intervals, there occurs one case in which the fasting blood sugar was 0.102 per cent.; thirty minutes later, the blood sugar reached the high point of 0.161 per cent., while at the end of an hour it was 0.097 per cent., below the fasting value.

The rapidity with which blood sugar may rise to the point of causing glycosuria and then promptly fall to normal within one hour of glucose ingestion was strikingly called to our attention in a patient in the University Hospital.

REPORT OF CASE

H. M., a white man, aged 36, was admitted to the service of Dr. Alfred Stengel, April 4, 1922, complaining of nervousness, palpitation, loss of weight, and swelling of the neck. Physical examination showed the typical findings of exophthalmic goiter, and the basal metabolic rate was 57 per cent.

TABLE 1.—*Results in the Sugar Tolerance Test*

	Blood Sugar Per Cent.	Urinary Glucose Per Cent.
Fasting	0.067	0
One hour after glucose	0.137	Trace
Two hours after glucose	0.058	1.7
Three hours after glucose	0.068	Trace

above the normal. In the course of a routine urinalysis, a small amount of sugar was found, and the urine of the subsequent twenty-four hours contained 4.5 gm. of glucose. Since the fasting blood sugar was only 0.105 per cent., a sugar tolerance test was made according to the technic of Janney and Isaacson.[9] Glycosuria resulted, yet, as can be seen in Table 1, the highest blood sugar figure was only 0.137 per cent. The estimations were made in duplicate, and after the method of Folin and Wu.[10]

TABLE 2.—*Results in the Sugar Tolerance Test Repeated, with Readings at Fifteen Minute Intervals*

	Blood Sugar Per Cent.	Urinary Glucose Per Cent.
Fasting	0.081	0
One-quarter hour after glucose	0.148	—
One-half hour after glucose	0.165	0.35
Three-quarters hour after glucose	0.161	—
One hour after glucose	0.114	2.1
One and one-quarter hours after glucose	0.103	—
One and one-half hours after glucose	0.097	Trace
One and three-quarters hours after glucose	0.086	—
Two hours after glucose	0.064	0
Three hours after glucose	0.075	0

In order to rule out a glycosuria due to a lowered renal threshold, the test was repeated, blood sugar readings being made every fifteen minutes. The results are shown in Table 2.

It will be seen that the blood sugar rise was very abrupt, giving a figure at fifteen minutes that is higher than any obtained in the first test, reaching its maximum

* From the Medical Division of the Hospital of the University of Pennsylvania and the William Pepper Laboratory of Clinical Medicine.

1. Jacobsen, A. T. B.: Untersuchungen über den Einfluss des Chloralhydrate auf experimentelle Hyperglykämieformen, Biochem. Ztschr. **51**: 443, 1913; Untersuchungen über den Einfluss verschiedener Nahrungsmittel auf den Blutzucker bei normalen, zuckerkranken und graviden Personen, Biochem. Ztschr. **56**: 471, 1913.

2. Graham, G.: Variations in the Blood Sugar in Health, J. Physiol. **50**: 285 (July) 1916.

3. Hopkins, A. H.: Studies in the Concentration of Blood Sugar in Health and Disease as Determined by Bang's Micro-Method, Am. J. M. Sc. **149**: 254 (Feb.) 1915.

4. Hamman, Louis, and Hirschman, I. L.: Studies on Blood Sugar, Arch. Int. Med. **20**: 761 (Nov.) 1917.

5. Bailey, C. V.: Studies on Alimentary Hyperglycemia and Glycosuria, Arch. Int. Med. **23**: 455 (April) 1919.

6. Goto, K., and Kuno, N.: Studies on Renal Threshold for Glucose, Arch. Int. Med. **27**: 224 (Feb.) 1921.

7. Friedenwald, Julius, and Grove, G. H.: Blood Sugar Tolerance Test as an Aid in Diagnosis of Gastro-Intestinal Cancer, Am. J. M. Sc. **163**: 33 (Jan.) 1922.

8. Gray, Horace: Blood Sugar Standards, Arch. Int. Med. **31**: 241 (Feb.) 1923.

9. Janney, N. W., and Isaacson, V. I.: A Blood Sugar Tolerance Test, J. A. M. A. **70**: 1131 (April 20) 1918.

10. Folin, O., and Wu, H.: System of Blood Analysis; Simplified and Improved Method for Determination of Sugar, J. Biol. Chem. **41**: 367 (March) 1920.

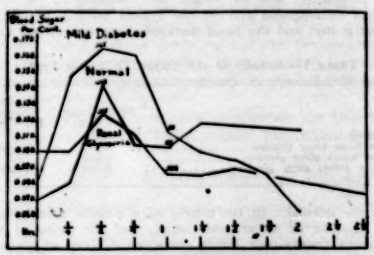
at thirty minutes, and falling to practically a normal level at the end of an hour. The glycosuria in this case we consider to be due to a mild but true diabetes mellitus, since it depended wholly on the diet, sugar appearing in the urine whenever the carbohydrate intake exceeded 150 gm. Nor did any increase in carbohydrate tolerance accompany a later improvement in the hyperthyroidism.

It is of interest to compare this fifteen-minute blood sugar curve (Table 2) with two others, the first obtained in a case of renal glycosuria, the second in a normal control. The renal glycosuria patient by mistake was given his breakfast about an hour before the glucose meal. The first figure of Table 3, therefore, does not represent a fasting level, which on another day was 0.079 per cent. The figures are given in Table 3.

A similar test was made in a person not suffering from any metabolic or renal disorder, with the results shown in Table 4.

In the accompanying chart the three curves have been superimposed.

Each curve reaches its peak at thirty minutes. In all three, the figures at one hour fall within the normal



Blood sugar curves.

range, yet in two of the patients the urine at this time showed sugar. Only a knowledge of the curve in the first hour made it possible to diagnose one of the cases as renal glycosuria with a low kidney threshold, while in the other case it showed that a normal renal threshold for glucose had been reached.

A glance at the first table will show that in the diabetic patient the glycosuria continued for some time after the blood sugar level had fallen below the primary threshold value. This phenomenon is a matter of common observation, and yet it has led to erroneous diagnosis of renal glycosuria, or at least of lowered renal threshold when an inadequate blood sugar study was made. For example, Levin and Kahn,[11] in a sugar tolerance study of twenty-three cases of acne vulgaris, concluded that in four of the cases "the presence of a glycosuria following administration of 100 grams of glucose, the presence of a normal blood sugar curve and the absence of other symptoms of diabetes warranted a diagnosis of decreased renal glucose threshold." Yet the blood sugar figures — fasting, three-fourths hour and two hours after glucose—in these cases were: (1) 0.080, 0.100 and 0.090 per cent.; (2) 0.135, 0.165 and 0.100 per cent.; (3) 0.110, 0.170 and 0.090 per cent.; (4) 0.090, 0.160 and 0.100 per cent. It might be argued that the figures in the last three cases showed a maximum level that was very close to the normal renal threshold for glucose, and that the curves are scarcely "normal blood sugar curves"; but, quite aside from that, it is not improbable that the blood sugar level was distinctly higher at some time prior to forty-five minutes after the glucose meal.

11. Levin, O. L., and Kahn, M.: Biochemical Studies in Diseases of the Skin, Acne Vulgaris, Am. J. M. Sc. 164:379 (Sept.) 1922.

TABLE 3.—*Results in a Fifteen-Minute Blood Sugar Test in a Case of Renal Glycosuria*

	Blood Sugar Per Cent.	Urinary Glucose Per Cent.
After breakfast	0.101	—
One-quarter hour after glucose	0.101	—
One-half hour after glucose	0.125	1.9
Three-quarters hour after glucose	0.111	—
One hour after glucose	0.088	3
One and one-quarter hours after glucose	0.087	—
One and one-half hours after glucose	0.091	0.5
Two and one-half hours after glucose	0.075	Trace

Therefore, since the finding of glycosuria and a blood sugar figure under the normal threshold level at one hour after a glucose meal necessitates a repetition of the test if only hourly blood examinations were made, the following routine for sugar tolerance testing is suggested. The glucose meal as described by Janney and Isaacson is given in the morning on a fasting stomach, the patient receiving 1.75 gm. of glucose for every kilogram of body weight. The glucose is dissolved in water, 2.5 c.c. for each gram of glucose, and a little lemon juice is added to make the drink more palatable. Blood samples are collected from a vein just before, and one-half hour, one hour and two hours after the glucose meal. This means only one additional vein puncture that should ordinarily present no difficulties. Five cubic centimeters of blood drawn into a tube containing a few oxalate crystals is sufficient. If the available veins are few or small, it may be found practicable to obtain the blood through a hypodermic needle attached to a 5 c.c. glass syringe, into the barrel of which have been dropped a few oxalate crystals. In this way, less trauma is inflicted on the vein, a hematoma is less likely to result, the same vein may be used more than once, and fairly small veins may be punctured in the absence of larger ones.

TABLE 4.—*Results in a Blood Sugar Test Made on a Normal Person*

	Blood Sugar Per Cent.	Urinary Glucose Per Cent.
Fasting	0.070	0
One-quarter hour after glucose	0.082	—
One-half hour after glucose	0.143	0
Three-quarters hour after glucose	0.105	—
One hour after glucose	0.103	0
One and one-quarter hours after glucose	0.120	—
One and one-half hours after glucose	0.118	0
Two and one-half hours after glucose	0.115	0

SUMMARY

The curve of alimentary hyperglycemia may reach its maximum and return to normal within one hour after glucose ingestion. This is true in certain diseases, notably mild diabetes mellitus, as it is in normal persons. In order to differentiate such cases of mild diabetes from conditions in which there is a lowered renal threshold for glucose, it is necessary to determine the blood sugar percentage at less than hourly intervals. It is therefore recommended as a routine in sugar tolerance testing

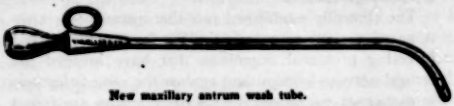
that blood sugar estimations be made just before, one-half hour, one hour and two hours after a standard glucose meal.

Clinical Notes, Suggestions, and New Instruments

A NEW MAXILLARY ANTRUM WASH TUBE

EARL L. VERNON, M.D., CHICAGO

This improved maxillary antrum wash tube is made of silver, fitted to a brass, nickel-plated connection which can be attached direct to either tubing or cutoff as desired, thus eliminating the additional connection used on so many other models. By so doing, the weight of the instrument is reduced to a minimum and the technic of the operation also is thus simplified. The openings of this instrument are placed later-



New maxillary antrum wash tube.

ally, assuring full capacity flow when in the sinus. The openings of many other models are placed anteroposteriorly, and apt to be occluded if in contact with the posterior antral wall. It is patterned after the fashion of the eustachian catheter, and is adapted to either antrum alike, thus eliminating the necessity of right and left instruments.

7 West Madison Street.

IMPROVISED RUBBER CORK — FOUNTAIN SYRINGE

O. M. RHODES, M.D., BLOOMINGTON, ILL.

Not infrequently one has need or desire for a rubber cork, and almost as frequently is unable to find one of suitable size or condition about his office or in the drug store. This need caused me to improvise this suitable article: Over an ordinary cork, a little smaller than the bottle one wishes to fit, is slipped a piece of rubber tubing up over it so as to fit tightly. The tubing is then cut off about one-eighth inch below the bottom end of the cork. The space thus formed is filled with melted paraffin, and thus a very satisfactory substitute is quickly obtained.

FOUNTAIN SYRINGE

When one has use for a fountain syringe and there is none in the home, or if there is one it is found to be out of repair when wanted, a substitute may be made by having the tinner solder two one-fourth inch tubes into the top of an ordinary mason fruit jar cap, enlarging the ends of the tubes so they will hold the rubber tubing when attached. Each tin tube should extend through the top, one extending from three-fourths to 1 inch above and the other the same distance below the top. This top with several feet of rubber tubing does not take up much space in one's grip, and one can find a half gallon mason fruit jar in practically every home. All that is necessary is to screw on the top, attach the tube with the hard rubber tip to the outside tube and a piece of tubing long enough to extend to within half an inch of the bottom of the jar, to permit the entrance of the air when the jar is inverted, and one is ready for business. This will be found especially convenient in country practice.

405 Corn Belt Bank Building.

Adult Tuberculosis from Childhood Infection.—Numerous cases of adult tuberculosis do spring from childhood implantations. The primary outbreaks of clinical tuberculosis of later life frequently emerge from a background of years-old infections.—A. K. Krause: Rest and Other Things, p. 48.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

CHEPLIN'S B. ACIDOPHILUS MILK.—A milk culture of *Bacillus acidophilus*. It contains not less than fifty million of viable organisms (*B. acidophilus*) per cubic centimeter at the time of sale.

Actions and Uses.—See Lactic Acid-Producing Organisms and Preparations (Jour. A. M. A., Sept. 8, 1923, p. 851).

Dosage.—For adults, from 500 to 1,000 Cc., increased or decreased to meet individual requirements. When employed in infant feeding, it may be diluted with water which has been boiled and cooled, or with lime water in such proportions as the case may demand; lactose (sugar of milk) should be added to restore the normal sugar content. Cheplin's *B. acidophilus* milk is marketed in bottles containing respectively 200 Cc. and 400 Cc. It must be kept on ice and should be consumed within the period of time stamped on the package (three weeks from date of preparation).

Manufactured by Cheplin Biological Laboratories, Inc., Syracuse, N. Y. No U. S. patent or trademark.

Fresh skimmed cows' milk is sterilized in one heating at 120° C. for 15 minutes. After cooling to at least 37° C. the milk is inoculated with a twenty-four hour culture of pure strains of *B. acidophilus* which have been grown, by repeated transfers, sufficiently long in milk to develop rapidly and bring about proper coagulation of the casein. Viable milk cultures of the organisms are employed as the inoculum. After inoculation the milk is kept at 37° C. for from 20 to 24 hours until an acidity is reached so that 10 cubic centimeters will require for neutralization 10 cubic centimeters of tenth-normal sodium hydroxide solution using phenolphthalein solution as indicator. The product is then agitated until completely homogeneous, transferred to 200 and 400 cubic centimeters bottles, which are closed with seals and cooled to 5° C. This strain of *B. acidophilus* used in one isolated by Cheplin. To insure maximum therapeutic effects and colonization within the human alimentary canal, the organism is freshly isolated from human intestinal contents as frequently as is found necessary through actual feeding experiments.

DIPHTHERIA ANTITOXIN CONCENTRATED (See New and Nonofficial Remedies, 1923, p. 283).

H. K. Mulford Company, Philadelphia.

Diphtheria Antitoxin Standard (Purified and Concentrated Globulin).—(Formerly marketed as "Diphtheria Antitoxin Concentrated (Globulin)." See New and Nonofficial Remedies, 1923, p. 283); also marketed in packages of one syringe (*M-020-07*), containing 20,000 units.

Diphtheria Antitoxin Superconcentrated.—The product resembles Serum Antidiphthericum Purificatum, U. S. P.; it differs in that the volume per thousand units is smaller and the protein content is claimed to be lower. Marketed in packages of one syringe (*M 6-04*) containing 1,000 units in a volume of approximately 0.7 Cc.; in packages of one syringe (*M 10-05*) containing 3,000 units in a volume of approximately 1.3 Cc.; in packages of one syringe (*M 14-02*) containing 5,000 units in a volume of approximately 3 Cc.; in packages of one syringe (*M 18-03*) containing 10,000 units in a volume of approximately 5 Cc.; in packages of one syringe (*M 20-07*) containing 20,000 units in a volume of approximately 6.5 Cc.

PROTEIN EXTRACTS DIAGNOSTIC-P. D. & CO. (See THE JOURNAL, Aug. 11, 1923, p. 477).

The following products have been accepted:

Colon Bacillus Protein Extract Diagnostic-P. D. & Co.; Gonococcus Protein Extract Diagnostic-P. D. & Co.; Micrococcus Catarrhalis Protein Extract Diagnostic-P. D. & Co.; Pneumococcus, Type I, Protein Extract Diagnostic-P. D. & Co.; Pneumococcus, Type II, Protein Extract Diagnostic-P. D. & Co.; Pneumococcus, Type III, Protein Extract Diagnostic-P. D. & Co.; Pseudodiphtheria Bacillus Protein Extract Diagnostic-P. D. & Co.; Staphylococcus Albus Protein Extract Diagnostic-P. D. & Co., Staphylococcus Aureus Protein Extract Diagnostic-P. D. & Co., Staphylococcus Citreus Protein Extract Diagnostic-P. D. & Co.; Typhoid Bacillus Protein Extract Diagnostic-P. D. & Co.

Prepared by the following method: Bacteria are grown on solid media and incubated from 24 to 48 hours. Each flask represents approximately 30 square inches of surface area. The growth is removed with 15 Cc. of physiologic solution of sodium chloride. The bacterial suspension is centrifugalized and washed twice, recentrifugalizing after each washing. After the second washing, the supernatant solution is removed and the bacterial culture from each flask is shaken with 15 Cc. sterile glycerin. The glycerin suspension is then shaken in a mechanical shaker for several hours. It is then heated for one hour at 60 C. and tested for sterility. The sterile suspension is then mixed with powdered boric acid in the proportion of two parts of glycerin suspension to three parts of boric acid.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE (See New and Nonofficial Remedies, 1923, p. 284).

Lederle Antitoxin Laboratories, New York.

Diphtheria Toxin-Antitoxin Mixture (0.1 L+).—Also marketed in 30 Cc. vials.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, OCTOBER 27, 1923

THE ACTION OF ARSENICALS IN THE BODY

To the chemist, the toxicity associated with arsenical compounds has long been surrounded by mystery. The growing use of arsenicals in certain fields of therapy has given an impetus to the demand for precise information as to their mode of action. In some types of cases, the results of the employment of various organic compounds of arsenic have been little short of brilliant, while in seemingly related conditions they may be far less effective. This is especially true with reference to the management of protozoal infections of the central nervous system. Arsenical compounds, such as arsenous or arsenic acid, do not show the marked "affinities" of many other chemical substances for the chief components of protoplasm. Their solutions are without immediate visible effects on the structure or functional activities of living cells, yet sooner or later the latter die as the result of the contact. To assume that arsenical compounds act through some vague catalytic process is not particularly enlightening. A recent writer[1] remarks that the investigator who has the temerity to attack the newer problems of chemotherapy is naturally confronted by great difficulties on account of the complexity of the heterogeneous system that constitutes protoplasm, and for this reason little or no information is available concerning the cellular action of most chemicals. Textbooks of pharmacology, therefore, are largely concerned with a description of what might be called the gross or more obvious effects produced by drugs and poisons. This is true of the action of arsenic.

Voegtlin[1] and his pharmacologic associates in the Hygienic Laboratory of the United States Public Health Service have observed that certain compounds containing sulphur groups in the SH form are able to counteract the toxic effect produced by arsenoxid on trypanosomes and a representative mammal. Hopkins, in particular, has arrived at the conclusion that compounds containing the SH group are concerned in certain phases of biologic oxidations and reductions. He has actually isolated from tissues a comparatively simple substance, glutathione, which doubtless plays such a part. The government experts, having found that trypanosomes, like all cells with an active metabolism, contain an SH compound (possibly glutathione), advance the theory that arsenic in certain trivalent forms is a specific poison for the SH groups therein. If, they remark, glutathione really plays such an important part in the life of the cell, then it is not at all surprising that substances such as arsenoxid, which react with the SH group of glutathione, should exert a toxic action. In final analysis, they add, arsenic would have to be considered as a poison that causes death of the cell by interfering with the oxidative processes governed by glutathione.

The clinically established fact that intravenous injections of various arsenicals are far less potent against infecting protozoal organisms that have invaded the central nervous system than against the same infections in earlier stages, before the micro-organisms are found in the cerebrospinal fluid and beyond, has been most puzzling. Voegtlin[2] and his associates attribute it to the behavior of the therapeutic products thus far most commonly used. From their experimental work they have arrived at the conclusion that the failures recorded are probably due to the fact that arsphenamin, neoarsphenamin and silver arsphenamin lack the essential penetrative power for the infected tissues, and for this reason they do not reach the last parasites in sufficient amounts to cause their death. The result is a relapse after treatment has been discontinued. In the effort to secure a more complete sterilization of syphilitic patients in more advanced stages of disease, sulpharsphenamin, tryparsamid, and 3-amino-4-oxyphenyl arsonic acid are suggested as remedies of superior penetrative power. At any rate, it is believed that an exhaustive trial of these compounds is now indicated in view of the fact that the treatment of neurosyphilis and the treatment of trypanosomiasis in its later stages have been such hopeless propositions.

1. Voegtlin, Carl; Dyer, Helen A., and Leonard, C. S.: On the Mechanism of the Action of Arsenic upon Protoplasm, Pub. Health Rep. 38:1682 (Aug. 17) 1923.

2. Voegtlin, Carl; Smith, M. I.; Dyer, Helen, and Thompson, J. W.: Penetration of Arsenic into the Cerebrospinal Fluid, with Particular Reference to the Treatment of Protozoal Infections of the Central Nervous System, Pub. Health Rep. 38:1003 (May 11) 1923.

RENAL BLOOD PRESSURE AND URINE FORMATION

Adequate knowledge of the factors that enter into the formation of urine and determine the conditions under which it is excreted by the kidneys must obviously be of great importance in many considerations of the functions of the living organism. What is it that promotes, what retards, the renal activities? Strange as it may seem in this era of experimental physiology, the answers to these questions have been under debate for nearly half a century. Consequently, teachers and textbook writers have become accustomed

to present the problem of kidney function with unusual deliberation and—what is always unsatisfactory—without marked conviction as to the proper conclusion to be drawn. Students have thus been taught for years to rehearse the competing theories respecting the secretion of urine.

Has not the time arrived to recognize that a satisfactory answer to some of the aspects of the subject is now at hand? The fact that there may be a parallelism between urine elimination and renal blood pressure has been recognized since the days of Carl Ludwig. His contemporary Heidenhain emphasized the fact that most conditions that alter blood pressure also affect the blood flow through the kidneys. It was not easy to distinguish the effects due to one of these factors to the exclusion of the other. Heidenhain, indeed, favored the view that the rate of urinary secretion depends on the rate of flow of the blood rather than on the capillary pressures in the kidney.

In an enlightening lecture before the Harvey Society in New York in 1921, Richards[1] presented evidence that increment of blood pressure, unaccompanied by increase in velocity or volume of blood flow in the kidney, increases urine formation. With his co-workers at the University of Pennsylvania, he[2] succeeded in perfusing the kidney by a method that permits the pressure within the renal circulation to be altered without necessarily altering the total blood flow through the organ. Changes in perfusion pressure induced by splanchnic stimulation, by introduction of epinephrin and nitroglycerin, by compression of the renal vein and by stimulation of the medulla were accompanied by parallel changes in the rate of urine elimination. The results are believed to constitute direct evidence in support of the filtration hypothesis of glomerular function.

At the Institute of Physiology in University College, London, Dreyer and Verney[3] have well substantiated these conclusions, being able to show anew that changes in the rate of urine secretion are determined primarily by changes in the height of the blood pressure and not by the velocity of blood flow when the composition of the blood remains unaltered. They have added the demonstration that changes in the composition of the blood are also preeminently important in this direction when the blood pressure remains constant, being often unaccompanied by any change in the velocity of blood flow. The English physiologists are therefore forced to the conclusion that the two physicochemical factors of primary importance in the causation of the flow of urine are the height of the arterial blood pressure and the chemical composition of the blood. Blood flow is a necessary accompaniment of secretion, but is not to be regarded as a cause per se. Some of the obstacles to more than a tentative theory of kidney function seem at length to be definitely removed.

1. Richards, A. N.: The Harvey Lectures, 1920-1921, Philadelphia, J. B. Lippincott Company, p. 163.
2. Richards, A. N., and Plant, O. H.: Urine Formation in the Perfused Kidney: The Influence of Alterations in Renal Blood Pressure on the Amount and Composition of Urine, Am. J. Physiol. 58: 144 (Feb.) 1922.
3. Dreyer, N. B., and Verney, E. B.: The Relative Importance of the Factors Concerned in the Formation of the Urine, J. Physiol. 57: 451 (Aug. 16) 1923.

"FRIENDS OF MEDICAL PROGRESS"

In the face of the astonishing modern advance in medical knowledge that has come as the result of well organized scientific experimentation, a remarkable phenomenon is presented by the activities of certain organizations, which have endeavored to obstruct such advance by perverting the truth, misleading the ignorant, and endangering the public welfare. Leagues organized to assure individual freedom, however dangerous that may be to community health, cults laboring to lower the standards of medical education and practice, antivaccination societies striving to abolish a well demonstrated protection against a devastating disease, and opponents of animal experimentation, doing their utmost to check or stop an essential method of medical progress, are striking illustrations of such efforts.

The perils that lurk in such mischievous propaganda have been augmented in recent years by placing the decision on scientific matters on a popular vote. By specious arguments for personal liberty, by subtle appeals to tender emotions and kindly sentiments, many voters have been led to oppose well founded measures for the protection of the public health. Physicians have repeatedly pointed out these perils. Practically, however, our profession is not favorably placed to oppose them. Physicians who denounce the exploiting of the public by ignorant and ill-trained charlatans, or who vigorously support medical measures for the promotion of individual and community hygiene, are often charged with selfish motives—they are supposed to be looking out for their own welfare and using the public welfare as a façade. Even if the unjustness of this view were recognized, physicians and health officers have neither the time nor the financial backing required to oppose effectively the fanatical campaigns constantly being waged. After all, intelligent laymen are quite as responsible for public security as are the members of the medical profession.

Under these circumstances, it is highly gratifying to note the creation of a national lay organization—the "Society of Friends of Medical Progress." The object of this society is "(1) to encourage and aid all research and humane experimentation for the advancement of medical science; (2) to inform the public of the truth concerning the value of scientific medicine to humanity and to animals; (3) to resist the efforts of the ignorant or fanatical persons or societies constantly urging legislation dangerous to the health and well-being of the American people."

The honorary president is Charles W. Eliot, ex-president of Harvard University; among the vice presidents are James R. Angell, president of Yale

University; Right Rev. Alexander Mann, bishop of the Episcopal Diocese of Pittsburgh; Cardinal O'Connell of Boston; Ellen F. Pendleton, president of Wellesley College, and Hon. Charles E. Hughes of Washington, D. C. The acting president is Thomas Barbour, the naturalist. Ernest Harold Baynes, whose articles on the value of vivisection to mankind and the lower animals have done much to popularize professional information in this subject, is the field secretary.[1]

This new organization appears at an opportune time, when widespread and dangerous movements are afoot to discredit scientific medicine, to procure legislation that would prevent the progress of medicine and surgery, and to destroy the bulwarks of preventive medicine and permit the incursion of diseases now held in check. The "Friends of Medical Progress" is to be a national society: if it spreads as a strong organization throughout the United States, it should perform a highly important function hitherto assumed with difficulty and with sacrifices, as a civic duty, by the medical profession.

Current Comment

THE CULT OF ABRAMS AND THE SCIENTIFIC AMERICAN

The "Electronic Reactions of Abrams"[2] are being investigated by the *Scientific American*. While THE JOURNAL is still of the opinion, expressed several times, that the whole scheme is so preposterous a fake as to stand self-condemned, yet, there are, presumably, some people who demand demonstrable evidence of the fact that the moon is not, and never was, made of green cheese. A preliminary article regarding the investigation to be undertaken by the *Scientific American* appeared in the October, 1923, issue of that publication. The first test to determine the accuracy of the "Electronic Reactions" diagnosis is reported in detail by the managing editor of the *Scientific American* in the current (November) issue. It makes amusing reading. Six tubes of pure germ cultures were submitted to an Abrams disciple with the request that he identify the cultures. The first tube was a pure culture of typhoid. The Abramsite diagnosed it as "acquired syphilis, congenital syphilis, tuberculosis, gonorrhea, Pneumococcus, malaria and influenza" but failed to diagnose typhoid. The second tube was a pure culture of pneumococcus. The "ERA" ("Electronic Reactions of Abrams") gentleman diagnosed the contents of this tube as "congenital syphilis, tuberculosis, gonorrhea, malaria, influenza and colon septecemia" but did not find what it really was, pneumococcus. The fourth was a tube containing a pure culture of tetanus. It was diagnosed as "malaria, influenza, colon septecaemia and diphtheria," but not tetanus. The sixth culture was of diphtheria. The Abrams wizard found "congenital syphilis, tuberculosis, gonorrhea, pneumococcus, malaria and colon septecemia." And so it went. When the Abrams disciple found that he was falling down hopelessly he began casting around for excuses. Looking at the vials which he had already tested, he discovered for the first time that the labels had red edges and bore blue handwriting. This catastrophic chromatic combination, naturally, shot the "ERA" all to pieces. The disciple explained how, quite recently, he had obtained very unsatisfactory results all one morning to find later that the cause was due to his "subject" (the healthy individual whose abdomen is percussed) having a piece of red cardboard, a theater seat check, in his trousers pocket. However, the *Scientific American's* committee removed the red bordered labels with the blue handwriting and substituted a set of plain labels prepared on the typewriter; but the diagnostic results were no more satisfactory than before. It may be said in closing that Albert Abrams has disowned the disciple who flunked the tests as not being a Simon Pure hundred percenter and has promised the *Scientific American* to give a personal demonstration "some time in the near future, if time permits." The whole thing is very funny and very foolish.

CHOOSING A PROFESSOR OF MEDICINE IN DENMARK

The retirement of Prof. C. Gram, whose name is familiar to every physician in connection with a certain stain, has left a vacancy in the professorship of internal medicine at the University of Copenhagen. The search for a successor has given rise to incidents that show the conditions under which professors seem to be appointed in Denmark. These conditions are certainly exacting. Five candidates applied for the vacant post, but before the final tests one withdrew, and the competitors left in the field were Dr. C. Lundsgaard, Dr. E. Meulengracht, Dr. C. Sonne and Dr. T. E. Hess Thaysen. From September 3 to September 12, these four had to give public lectures to a jury of Scandinavian experts, some of whom had come from Norway and Sweden at the invitation of the Danish medical authorities. Some inkling of the severity of the tests is to be found in the fact that they had to lecture not only on subjects chosen by themselves, but on others chosen by the jury. The scientific records of the competitors were also scrutinized by the jury, which in the end failed to agree. The majority voted in favor of Dr. Lundsgaard, while a minority of three voted in favor of Dr. Sonne. The majority report, which was signed by six members of the jury, throws out the comforting hint that a new professorship may shortly be created, and that Dr. Sonne had proved himself a good second in the competition. The publication of the deliberations of the jury has evoked a storm of criticism from the medical profession in Denmark, and an appeal, signed by 136 physicians, has been addressed to the medical faculty and the ministry of education, urging that the final decision be not taken till the medical faculty has had an opportunity to investigate all the circumstances of the examination. It is pointed out, in this appeal, that the subject of a lecture chosen by the jury was one on which Dr. Lundsgaard had

1. The organization may be addressed as The Society of Friends of Medical Progress, 28 Newbury Street, Boston.
2. A reprint of the matter that has appeared in THE JOURNAL on the Abrams vagaries will be sent on receipt of five cents in stamps.

specialized. He had, in fact, written a paper on a closely allied subject, and this paper had been among others sent to the jury, some of the members of which had not known of its existence. The suggestion is made that in this matter Dr. Lundsgaard was given an unfair advantage. Be this as it may, it is evident that attaining a professorship of medicine in Denmark is an arduous task requiring not only high qualifications but also a thick skin capable of withstanding the fierce light of publicity. Appointments *in camera* are, of course, liable to abuse, but it is obvious that public competitive examinations of potential professors are not without their serious drawbacks.

BARTER IN MEDICAL DIPLOMAS

Elsewhere in this issue [1] appears an account of the ease with which an impostor obtained a degree in medicine and a diploma in osteopathy, and arranged to have his state examination taken by an impersonator. Another item [2] refers to an exposé of a notorious ring of diploma-venders now being carried on by the newspapers of St. Louis and Kansas City. For several years there have been occasional indications of the existence of this ring of diploma-venders; of late they have been less discreet in their methods. Now their manipulations are being exposed, but there are doubtless others who will promptly take up the business where these have left it. The important thing is that adequate safeguards are being established which will prevent the use of such diplomas. In fact, the diplomas already sold are scarcely worth the paper they are printed on. Even had such diplomas been obtained by bona fide students, they would be almost worthless owing to the extremely low grade of the institution granting them. At this time the diplomas sold will admit their holders—or possibly their impersonators—to the licensing examinations in only three states, Massachusetts, Wyoming and Connecticut, and the District of Columbia, and even in these states, the door will be closed just as soon as practice laws will give the licensing boards the needed authority to close them. The time is quite near when purchasers of medical diplomas will not be able to secure a license in any state of this country and when the diploma-venders will be forced to seek some other calling.

A PASTEUR INCIDENT, 1885-1923

A foreign dispatch that appeared in the lay press a few days ago announced the death of Jupille, for many years a laboratory helper attached to the staff of the Pasteur Institute in Paris. Those who have read Vallery-Radot's fascinating biography of the great French savant may identify Jupille as the shepherd lad who at the age of 14 was bitten by a mad dog near Villers-Farley, in the Jura, and six days later reached Paris for antirabic treatment. The boy was the second person to receive from Pasteur preventive treatment of hydrophobia after a bite, in October of 1885, the little Alsatian boy Joseph Meister having been the first to enter the laboratory for this purpose, July 6 of the same year. What anxious days they were—days of hopes, fears and anguish until the success of the novel effort to vanquish the virus of one of the most terrible of diseases was established. Today, thirty-eight years later, as we contemplate the greatness of the blessing Pasteur conferred on the world by his researches on rabies, we can scarcely realize what vision, conviction and courage it required to undertake preventive inoculation in man. It was in connection with the report on Jupille that the chairman of the Academy of Sciences uttered the memorable words:

> We are entitled to say that the date of the present meeting will remain for ever memorable in the history of medicine, and glorious for French science; for it is that of one of the greatest steps ever accomplished in the medical order of things—a progress realized by the discovery of an efficacious means of preventive treatment for a disease, the incurable nature of which was a legacy handed down by one century to another. From this day, humanity is armed with a means of fighting the fatal disease of hydrophobia and of preventing its onset. It is to M. Pasteur that we owe this, and we could not feel too much admiration or too much gratitude for the efforts on his part which have led to such a magnificent result.

This prophesy has been verified. Since the year when Meister and Jupille received the first Pasteur antirabic treatments, the mortality in thousands on thousands of cases has been kept at less than 1 per cent.; without the treatment, it would certainly have been more than 16 per cent. The formal "Service de la rage" was organized in Paris thirty-eight years ago. Antirabic institutes, formerly termed Pasteur institutes in many cities, are now to be found throughout the civilized world.

1. Medical Education, Registration and Hospital Service, this issue, p. 1463.
2. Missouri News, this issue, page 1448.

Association News

ANNUAL FELLOWSHIP DUES AND SUBSCRIPTION TO JOURNAL REDUCED

The Board of Trustees of the American Medical Association has authorized the reduction of the annual Fellowship dues and subscription to THE JOURNAL to five dollars per annum, to take effect, January first, 1924.

PRESENTATION OF PAPERS BEFORE SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

To Fellows:

Any Fellow who would like to present a paper before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Chicago session is requested to write the secretary before Dec. 15, 1923. So far as possible the papers for the final program of this section are selected from the subjects submitted by members for the preliminary program. The preliminary program consists of all papers submitted prior to the date on which the final program must be forwarded to the Secretary of the American Medical Association. A brief outline showing the scope of the paper should be submitted with the title. No one is asked to write a paper except under the following conditions: (1) lack of suitable papers; (2) to round out a symposium, or (3) an invited guest not eligible to fellowship in the Association.

Papers of a highly technical or theoretical nature are not desirable for use in this section.

The total time permitted for the presentation of a paper, including lantern slides, is fifteen minutes. This time limit is strictly followed.

Whenever two or more members of the Association have worked together on a subject, it is best presented in a joint paper. This lessens the possibility of something interfering with the presentation of the paper, since at least one of the co-authors will be able to attend the session.

The executive committee aims to secure a well rounded program which will be worth your making the trip to Chicago. The secretary wishes to have a large number of possible papers in the preliminary list from which the final selections may be made. Your help will be appreciated.

CARL HENRY DAVIS, M.D., Milwaukee.
Secretary, Section on Obstetrics,
Gynecology and Abdominal Surgery.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Personal.—Dr. Lewis A. W. Burtch, Phoenix, has been appointed superintendent of an industrial hospital at Pachuca, Hidalgo, Mexico.——Dr. B. E. Galloway, El Paso, has located in Aguascalientes, Mexico.——Dr. Caleb C. Hedberg, Los Angeles, has been appointed on the staff of the United Verde Hospital, Jerome.

ARKANSAS

Harding Memorial Hospital.—The Harding Memorial Hospital Fund will soon be launched for the purpose of raising $150,000 for the erection and equipping of one of the main wings of the Baptist State Hospital, Little Rock, as a memorial to the late President, Warren G. Harding. Former Governor Brough has been appointed chairman of the general committee and will tour the state on behalf of the fund; $5,000 has already been subscribed by a person who wishes to remain anonymous.

Personal.—Dr. Morgan Smith, dean of the University of Arkansas Medical Department, Little Rock, has resigned and will resume private practice.——Dr. John E. Marvin Taylor, Sparkman, has been appointed secretary of the Dallas County Medical Society to succeed Dr. Claiborne J. March, Fordyce, who resigned.——Dr. W. Turner Wootton, Hot Springs, addressed the joint meeting of the Medical Society of the Missouri Valley and the Interstate Society of Radiology and Physiotherapy at Omaha, Neb., recently.——Dr. Hison F. Williams, Ozark, was elected president of the Tenth Councilor District Medical Association at the annual meeting in Fort Smith.

CALIFORNIA

British Surgeon Entertained.—Sir William Macewen, regius professor of surgery, University of Glasgow, Scotland, was the guest of the California Academy of Medicine, San Francisco, September 20, when he addressed about 150 physicians, among whom was Ray Lyman Wilbur, President of the American Medical Association. Sir William is en route to Australia as representative of the British Medical Association (of which he was president in 1922) at the Australasian Medical Congress.

Medical Practice Act Amended.—The California legislature of 1923 amended the medical practice act providing that those who file an application for written examination between Aug. 18, 1923, and Dec. 31, 1923, are not legally required to show premedical education qualifications of more than a high school education. This postpones the additional requirement of one year of college work till Jan. 1, 1924. Previously, the law was that this requirement should be completed before the student began the last half of the second year's medical work.

State Hospital Conference.—The third annual conference of the hospitals of California was held in San Francisco, October 18-20, under the auspices of the League for the Conservation of Public Health. Free hospital care and the narcotic situation in California were the chief topics of discussion. Dr. Dudley A. Smith, Oakland, president of the League for the Conservation of Public Health, presided at the meeting for the discussion of the narcotic situation, at which Curtis Wilbur, chief justice of the supreme court of California, gave an address. Dr. Ray Lyman Wilbur, President of the American Medical Association, spoke on "The Duties and Responsibilities of the American Medical Association in Hospital Betterment." More than 300 hospitals were represented.

COLORADO

Psychiatric Clinic for Denver.—It is reported that the National Committee on Mental Hygiene of New York has offered to establish in Denver a psychiatric clinic for backward and delinquent children and to operate the clinic free of expense to the city for a period of one year, provided that the city will furnish the quarters and equipment and continue to maintain the clinic for at least five consecutive years on a budget of not less than $25,000. Such clinics have been established in Minneapolis, Cincinnati and Dallas, Texas. A special committee has been appointed to investigate the offer.

CONNECTICUT

Yale School of Nursing.—Miss Annie W. Goodrich, dean of the new Yale School of Nursing, New Haven (THE JOURNAL, April 28, p. 1249) which will receive its first students in February, 1924, has announced the following appointments: Effie J. Taylor, Hamilton, Ont., Canada, associate professor of nursing; Bertha Harmer, Toronto, Canada, assistant professor of nursing and assistant superintendent of nurses at the New Haven Hospital; Margaret Carrington, St. Paul, instructor of nursing and supervisor in the New Haven Hospital; Helen M. Stelling, Hartford, instructor in nursing and assistant supervisor of obstetrics and gynecology; Mabel Fletcher, resident director of the Yale School of Nursing, and Dorothy Tarbox, Westport, Maine, assistant superintendent of nurses.

DELAWARE

Delaware State Medical Society.—At the annual meeting of the Medical Society of Delaware at Middletown, October 8-9, held under the presidency of Dr. Dorsey W. Lewis, Middletown, the following officers were elected for the ensuing year: president, Dr. John Roscoe Elliott, Laurel; vice presidents, Drs. Isaac J. MacCollum, Wyoming, and William V. Marshall, Wilmington; secretary, Dr. William O. LaMotte, Wilmington, and treasurer, Dr. Samuel C. Rumford, Wilmington. The 1924 session will be held at Milford, October 14-15. Drs. Charles P. Noble, J. P. Crozer Griffith and William L. Clark, all of Philadelphia, and Dr. Tom A. Williams, Washington, D. C., were among the visiting physicians who addressed the meeting.

FLORIDA

Child Welfare Clinic.—The Kiwanis Club of West Palm Beach recently subscribed nearly $1,000 toward a clinic for the free examination and medical attention of the poor and needy children of the city. The Good Samaritan Hospital Association has offered to make a special rate of $1.50 a day for children placed in the hospital by the club, with free use of the operating room.

ILLINOIS

Tuberculosis Association to Meet.—The fourteenth annual meeting of the Illinois Tuberculosis Association will be held in Springfield, October 29-30.

Physician Gives Hospital to Baptists.—At the Illinois State Baptist Convention at Oak Park, October 17, Dr. Arthur W. Allen, Robinson, presented the association with a $150,000 hospital at Robinson.

DuPage County Offers Free Medical Service.—DuPage County, through the board of supervisors, has arranged to provide, at public expense, the surgical and medical care necessary for the welfare of children whose parents are unable to provide such service, according to newspaper reports. The administration of this public service will be carried out under the direction of the county physician, Dr. W. L. Migely of Naperville. The board proposes to make the service county-wide.

Baby Conferences.—During September the division of child hygiene and public health nursing of the state department of public health directed fourteen better baby conferences. A total of 2,291 children between 6 months and 5 years of age were examined. In all instances the professional services of a physician and nurse were furnished by the division, which also supplied standard record forms and literature

for distribution. Local organizations of various character, including members of the medical profession, were responsible for the undertaking of the conferences and participated generously in the work. Beginning with October, the division resumed its activity of conducting diagnostic orthopedic clinics, a service that was interrupted during August and September because of the heavy baby conference schedule. ——Among 1,076 children between 6 and 72 months of age examined at the annual better babies conference at the state fair, 380 had enlarged glands in the neck, 155 had some abnormality of the feet and legs, 199 had some minor skin trouble, 76 had nutritional disturbances, 97 had decayed teeth, and 403 had enlarged tonsils. There was but one child that measured up completely to the standard of measurements used. In all, 614 of the 1,076 examined were registered as having been breast fed, with 130 others recorded as having been partly breast fed. Of the whole number, 533 were boys and 543 girls.

Chicago

Research Fellowships Announced.—The Michael Reese Hospital announces the establishment of two fellowships of $30,000 each and two research funds of $50,000 each; the first by Mr. and Mrs. John Hertz, the second by the trustees of the Joseph G. Snydacker estate, the third by the trustees of the Gusta Morris Rothschild estate and the fourth by Albert Kuppenheimer.

Northwestern's Drive for Funds.—With more than $1,700,000 contributed in precampaign gifts, Northwestern University's drive for a $5,000,000 building and endowment fund was formally opened, October 22. It is planned to erect a medical school and hospital skyscraper at Chicago Avenue and Lake Shore Drive. Schools also of law, dentistry and commerce will be built there.

Personal.—Dr. Emilius C. Dudley, who in the last two years has been visiting professor of gynecology at Hsnan-Yale Medical School, Changsha, China, the Peking Union Medical College, Peking, China, and the University of the Philippines College of Medicine and Surgery, Manila, P. I., has resumed practice in Chicago.——Dr. Franklin C. McLean, for several years director of the Peking (China) Union Medical College, has been appointed professor of medicine at the University of Chicago Medical School.——Dr. B. Barker Beeson, Chicago, has been elected a corresponding member of the Société médicale des hôpitaux de Paris.

American Association of Railway Surgeons.—The annual meeting of the association was held in Chicago, October 18-20, under the presidency of Dr. John H. Rishmiller, Minneapolis, chief surgeon of the Soo Line. The following officers were elected for the ensuing year: president, Dr. Duncan Eve, Jr., Nashville, Tenn.; vice presidents, Drs. Clay L. Nichols, Louisville, Ky.; James Y. Welborn, Evansville, Ind., and H. Clay Manning, Cushing, Okla.; secretary-editor, Dr. Louis J. Mitchell, Chicago (reelected), and treasurer, Dr. Frederick G. Days, Chicago (reelected).——Dr. Thomas R. Crowder, Chicago, was elected president of the Association of Railroad Chief Surgeons.

Hospital News.—Mr. E. I. Erickson has succeeded the late Dr. Matthias Walstrom as superintendent of the Augustana Hospital, Chicago.——The Ravenswood Hospital, Chicago, opened its new $336,000 building, October 13, thus giving the institution a total capacity of 125 beds.——More than $100,000 was collected on the annual tag day of the Chicago Children's Benefit League, October 15. Fifty-one charities were represented. In 1922 the sum of $92,600 was collected.—— The German Evangelical Deaconess Hospital will hold open house during the Milwaukee convention of the American Hospital Association, and welcomes all visitors to inspect the new building recently opened.——Dr. Isaac J. Frisch and Dr. Samuel C. Greenwald of Michael Reese Hospital, Chicago, have purchased the Cottage Hospital, Harvard, owned by Dr. C. M. Johnson, at a cost of $20,000.

INDIANA

"M.D." Instead of "Dr."—At the recent Terre Haute session of the state medical association a motion prevailed in the house of delegates to the effect that members of the association should use the letters "M.D." after their names in preference to the prefix "Dr." which is now used by so many non-medical men.

Tuberculosis Conference.—At the eleventh annual Mississippi Valley Conference on Tuberculosis, held at Evansville, October 8-10, the following officers were elected: president, Dr. James S. Painchard, Battle Creek, Mich.; vice president, Murray A. Auerback, Indianapolis, and secretary-treasurer, Dr. H. M. Cass, Huron, S. D. The next annual convention will be held in Sioux Falls, S. D., in 1924. The National Tuberculosis Association was petitioned by the society to hold its convention next year in some state in the Mississippi Valley.

Dr. Smith Appointed Provost.—Dr. Samuel Edwin Smith, East Haven, superintendent of the Eastern Indiana Hospital for the Insane, Richmond, since 1891, has resigned to accept the position of medical provost of Indiana University, Indianapolis, which includes the Indiana University School of Medicine, the Robert W. Long Hospital, the City Dispensary, the James Whitcomb Riley Hospital for Children, the social service department and the Indianapolis branch of the extension division. Should Indiana take over the Indiana Dental College or establish a school of dentistry, it would also be under Dr. Smith's supervision. The office of provost is a new one created by the board of trustees of the university to relieve the president of the university of duties necessary at Indianapolis in connection with his work at Bloomington.

IOWA

Hospital News.—The addition to the tuberculosis sanatorium, Oakdale, is to be ready for occupancy, November 1, according to a recent announcement. The four-story structure, erected at a cost of $188,000, will be used only for patients in an advanced stage of the disease.——The new eighteen bed addition to the People's Hospital of Buchanan County, Independence, will soon be ready for occupancy.—— The Iowa Methodist Hospital, Des Moines, has just completed the $70,000 remodeling program.——The Morningside General Hospital, Sioux City, was opened to the public, September 1. This, the eighth hospital to be established in Sioux City, is being sponsored by the Morningside Commercial Club. Dr. Charles Thompson is president.

LOUISIANA

New Board of Health.—Mayor Baucum has appointed Drs. James D. Baucum, Leonard Green and William Lannie Waller, Luther Beene and L. E. Martin to serve as city board of health for Haynesville.

Governor's Home Will Be Sanatorium.—The old Fort St. Leon plantation, formerly the home of Governor Villere, near New Orleans, is being converted into the Rosella Sanatorium for the treatment of tuberculosis, at a cost of $70,000. Rosella Sanatorium will be conducted privately by Dr. Emile A. Bertucci, and will have accommodation for forty patients. It is expected that the institution will be opened to the public, November 15.

MARYLAND

Pilgrimage to Jewish Home.—The tenth annual pilgrimage to the Jewish Home for Consumptives at Reisterstown, held recently, was participated in by 500 Jews. Tree planting in honor of patrons and officials who have died is a feature of the yearly visit to the home; 500 trees have been planted, each with an engraved plate affixed.

Plans for Sanitation.—The bureau of sanitary engineering of the state department of health has presented plans for water works, sewerage systems, and other municipal and sanitary district improvements that will require more than $15,000,000 to complete. More than $2,000,000 will be spent shortly on plans that have already been presented and approved by the bureau.

Dedication of Pathologic Laboratory.—Formal dedication of the new pathologic laboratory building of the Johns Hopkins Medical School will be held, November 1. Leading scientists of the country have been invited to attend. Addresses will be made by Dr. Frank J. Goodnow, president of the university; Dr. William G. MacCallum, Baxley professor of pathology, and Dr. William H. Welch, director of the Johns Hopkins School of Hygiene and Public Health.

Administrative Health Practice Bureau to Be Established.—Quarters for the Administrative Health Practice Bureau of the American Public Health Association have been provided at the School of Hygiene and Public Health, Johns Hopkins University. The bureau will be under the auspices of the U. S. Public Health Service and the committee on municipal health practice of the American Public Health Association, and will be financed by the federal government. Baltimore was selected for this bureau at the annual meeting of the association in Boston, because it is convenient, and quarters were available at the School of Hygiene.

Hospital News.—The new Union Memorial Hospital, Baltimore, opened September 22, will accommodate twice as many

free patients as the old building. There are 182 beds in the new hospital. Thirty-two of the ninety-six private rooms will be used for nurses' quarters until a nurses' home is built. On the sixth floor is the suite of operating rooms installed in honor of Dr. J. M. T. Finney, by his associates.——The campaign to raise $300,000 for the new West Baltimore General Hospital opened, October 12, with $31,875 in special contributions pledged. The drive, conducted under the direction of Judge Jacob Moses, continued two weeks. The new hospital will occupy the building formerly owned by the Hebrew Orphanage, and the funds raised will be expended for new buildings, and repairs, furnishings and equipment.——The Hebrew Hospital and Asylum, Baltimore, will soon take bids for the new hospital building and nurses' home.

MASSACHUSETTS

Personal.—Dr. George G. Parlow has resigned as pathologist at the City Hospital, Fall River. Dr. James H. Walsh, bacteriologist for the board of health, will undertake part of Dr. Parlow's work.——Dr. L. E. Phaneuf, Boston, has been elected a fellow of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

Illegal Practitioners Fined.—According to reports, Joe Guey Shong, Boston, was fined $200 by Judge Sanderson of the superior court, recently, for illegally practicing medicine.——Dr. T. E. Walsh, Boston, was fined $200 recently, according to reports, for continuing to have his name listed in the telephone book as a physician. Dr. Walsh's certificate of registration was revoked two and a half years ago.

MINNESOTA

Academy of Medicine Elects Officers.—At a meeting of the Minnesota Academy of Medicine, September 19, Dr. Arthur S. Hamilton, Minneapolis, was elected president; Dr. Harry P. Ritchie, St. Paul, vice president, and Dr. John E. Hynes, secretary-treasurer.

Central School of Nursing.—The Central School of Nursing of the University of Minnesota, Minneapolis, will enter during the ensuing year only two classes, one for the fall quarter, the other for the spring quarter. A high school diploma is required for admission. The school commands the nursing service for educational purposes of four associated hospitals, the University Hospital (Minneapolis), the Charles T. Miller Hospital (St. Paul), the Minneapolis General Hospital and the Northern Pacific Hospital.

Pirquet Resigns to Return to Vienna.—Dr. Clemens F. Pirquet, for two weeks head of the department of pediatrics at the University of Minnesota has resigned and will return at once to Vienna, Austria. The principal reason for leaving given, in a statement, by Dr. Pirquet was that the research work in which he is engaged requires a large amount of clinical material and an organized hospital and that the comprehensive plans for a hospital provided by the Eustis bequest would require considerable time for completion. Dr. Pirquet also expressed a feeling of homesickness for his Vienna hospital and of inability to adapt himself to his new conditions; a third reason was the continued illness of Mrs. Pirquet since her arrival in the United States.

MISSISSIPPI

Formal Transfer of Hospital.—The formal transfer of patients from the Matty Hersee Hospital, which is being abandoned as a charity hospital, to the new East Mississippi Charity Hospital, Meridian, was made, September 28. Several civic organizations of the city furnished rooms at the new institution and aided in moving. Dr. Samuel H. Hairston, who purchased from the city the Matty Hersee building and site, will convert it into a private hospital after general remodeling.

MISSOURI

Kansas City Clinical Conference.—The Annual Fall Clinical Conference of the Kansas City Clinical Society was held, October 8-13. Among the physicians who addressed the sessions were Drs. Lewellys, F. Barker, Baltimore; Peter Bassoe, Chicago; Russell D. Carman, Rochester, Minn.; Henry Dwight Chapin, New York; Edward V. L. Brown, Chicago; Walter Timme, New York; John H. Cunningham, Boston; John B. Deaver, Philadelphia; Joel E. Goldthwait, Boston; Reuben Peterson, Ann Arbor, Mich., and Francis M. Pottenger, Monrovia, Calif. The next conference will be held in Kansas City, Oct. 13-18, 1924. The society had a special session on Friday, October 12, in connection with the annual meeting of the Southwest Branch of the American Urological Association.

A Missouri Diploma Mill.—During the past week the St. Louis *Star* has published a series of sensational articles exposing a traffic in fraudulent medical diplomas and high school certificates. A member of the staff of the paper is said to have purchased within the past ninety days a fraudulent high school certificate alleged to have been signed by W. P. Sachs and dated 1914 and also an equally fraudulent medical diploma purporting to be from the Department of Medicine of the National University of Arts and Sciences (which went out of existence in 1918), dated 1916. The reporter also obtained a certificate of license to practice medicine in the State of Tennessee, the name of the person to whom the license was originally issued having been erased and the newspaper man's name filled in in its place. The newspaper presented its evidence to state and federal prosecuting authorities and reports that, as a result, Drs. Ralph A. Voigt and D. R. Alexander, both of Kansas City, Dr. Robert Adcox of St. Louis and Professor W. P. Sachs, also of St. Louis, have been arrested.

NEW JERSEY

Society News.—At the annual meeting of the Cumberland County Medical Society in Bridgeton, October 2, Drs. Clarence Percy Lummis, Bridgeton, and H. C. Miller were elected president and secretary, respectively.——Dr. John Edgar Howard, Haddonfield, was elected president of the Camden County Medical Society, October 10, at the annual meeting in Camden; Dr. Charles H. Jennings, Merchantville, was elected vice president and Dr. Thomas B. Lee, Camden, secretary.

NEW YORK

"Medical Week" Moves.—The editorial office of *Medical Week*, the official organ of the Medical Society of the County of New York, has been moved from 47 West Thirty-Fourth Street to 67 West Ninety-Fourth Street, New York City.

Memorial Service for Physician.—The Buffalo Academy of Medicine, the Physicians' Protective Association and the Erie County Medical Society held a memorial meeting, October 10, for Dr. John H. Pryor, who died, July 20. Dr. Pryor was given credit at the meeting for introducing into this country the Rollier treatment for tuberculosis, and for founding the first public institution for the exclusive treatment of tuberculosis, the Raybrook Hospital, near Saranac.

Society News.—At the annual meeting of the New York Society for Clinical Psychiatry, October 11, at the New York Academy of Medicine, Dr. Albert M. Barret, professor of psychiatry at the University of Michigan Medical School, Ann Arbor, spoke on "Constitutional and Dispositional Factors in Psychiatry."——The decennial banquet and dance of the Bronx County Medical Society will be held, Jan. 9, 1924, at the Coucourse Plaza.——The First District Branch of the Medical Society of the State of New York held its annual meeting in Tuxedo Park, October 16, under the presidency of Dr. Edward C. Rushmore. Dr. Joseph A. Blake spoke on "The Larger Aspect of the Treatment of Fractures." He considered his subject from the point of view of how fractures might be handled from the practical and economic side, stating that he wished to bring this subject before the profession because the public had become interested in it. This had come about largely because of results shown by roentgenograms in fracture cases, and the public had come to accept these instead of the functional result as the criterion. Dr. Blake discussed three ways of handling fracture cases: (1) the use of easily accessible hospitals located at strategic points; (2) the development of certain surgeons so that they would be especially equipped to care for such cases, and (3) the general practitioner.

Campaign to Improve Economic Status of Physicians.—A movement has been initiated by Dr. Orrin Sage Wightman, president of the medical society of the state of New York, to awaken laymen and municipal administrators to recognize the value of the medical services rendered to municipalities and to the hospitals and dispensaries under their control. It will be shown that physicians have long considered it their duty and privilege to care for the sick poor of the community. In so doing they have pauperized themselves, and the public has come to expect this free service as a matter of course. Even when physicians receive compensation for their services, the amount represents an entirely inadequate return on the expenditure for the capital invested. No other class of persons in the community works for the city for nothing. The city pays for police protection, for fire protection and for other services. The time has arrived when municipalities must consider paying physicians on the basis of a limited

per capita fee, and it is well that the public begins to consider this matter. Action will have to be taken soon, for even now there is a dearth of interns and medical students who are willing to give their time in hospitals and dispensaries without compensation, and the problem of manning these institutions is growing acute. Dr. Wightman is presenting this problem to physicians throughout the state and asking their cooperation in enlightening the public to the existing situation whereby physicians are bearing practically the entire burden of providing medical services to the sick poor.

New York City

Illegal Practitioner Convicted.—Samuel Barnett, who was arrested last August on the charge of practicing medicine without a license at 132 West One Hundred and Thirty-First Street, has been found guilty by Justices Herrmann, O'Neill and Herbert. The defendant was remanded to the Tombs for sentence, October 15.

Fewer Drug Addict Cases.—At the annual conference of the state association of magistrates, held in Geneva, October 13, Judge Cornelius F. Collins of New York, chairman of the Committee on the Drug Evil, reported a falling off of 35 per cent. in the number of cases of drug addiction passing through the court of special sessions in New York.

Food Handlers Must Be Licensed.—Every man and woman in Greater New York who comes in personal contact with the public handling of food must obtain a license from the department of health by November 1, certifying that he or she is free from either contagious or infectious disease. Dr. Frank J. Monaghan, health commissioner, estimates that about 180,000 persons will require licenses.

Chamber of Commerce Names Public Health Committee.—At a meeting, October 12, the Brooklyn Chamber of Commerce appointed a public health committee which will have to do with the plans concerning sewage and garbage disposal, and the health exposition to be held in November. The committee consists of: Dr. Frank D. Jennings, chairman, Drs. Alfred E. Shipley, Thomas M. Brennan, William S. Hubbard, Carl H. Laws, Joseph W. Malone, N. P. Rathbun, Charles T. Schendelmeier, Luther F. Warren and a number of lay members.

Polyclinic Post-Graduate Medical School and Hospital Reopened.—This institution, which has been closed since used as an army hospital, has been renovated and reopened, largely through the efforts of Dr. Charles Gardner Child, Jr., Dr. Edward L. Kellogg and Dr. Orrin Sage Wightman. The faculty and the staff of the hospital have been reorganized. Dr. Ellsworth Eliot, Jr., is president of the faculty, and Dr. Charles N. B. Camac, secretary. Dr. Eliot is head of the surgical staff of the hospital; Dr. Orrin Sage Wightman is head of the medical staff. The membership of classes has been limited until the reorganization plans are more fully completed. The plans include a Spanish department, in which classes will be conducted by Spanish professors.

Four Free Clinics Opened.—The Jewish Board of Guardians, supported by the Federation for the Support of Jewish Philanthropic Societies, has opened four free clinics where medical, neurologic, psychiatric and psychologic examinations and treatment will be given. They will be available to all men and women under the board's supervision. Dr. Spencer Strauss, New York Post-Graduate Medical School and Hospital, is director of the psychopathic clinic. Dr. Newton Thomas Saxe, pediatrician of the New York Post-Graduate Medical School and Hospital, will be in charge of the medical clinic. Mrs. Joseph Hardy is chairman of the mental hygiene committee of the board, and Mortimer L. Schiff is president of the board.

Personal.—Dr. Frederick Luithin, professor of dermatology of the University of Vienna, recently delivered a lecture at the Post-Graduate Hospital on the subject of "Recent Advances in the Therapy of Skin Diseases."——Dr. Hugh Cabot, Ann Arbor, Mich., addressed the stated meeting of the New York Academy of Medicine, October 18. His subject was "Some Observations on Renal Affections."——Dr. William C. Finnoff, Denver, read a paper before the section on ophthalmology of the New York Academy of Medicine, October 15, on "Ocular Tuberculosis, Experimental and Clinical."——Dr. David Dudley Krupp, Brooklyn, has been placed in charge of the roentgen-ray department of the South Side Hospital, Bay Shore, L. I.——Mr. Clifford Beers, New York City, recently spent six weeks in England, France and Belgium in the interest of an International Congress on Mental Hygiene, to be held in America in 1924 or 1925. Mr. Beers, who is secretary of the National Committee for Mental Hygiene, was received by the king of Belgium, Cardinal Mercier, Premier Poincare and M. Clemenceau.

NORTH CAROLINA

Clinic at Charlotte.—Dr. Alfred Stengel, professor of medicine at the University of Pennsylvania, Philadelphia, will be the guest of honor at a two day clinic to be held in Charlotte, November 2-3, to which all physicians are invited.

Hospital Contracts Let.—Three contracts have been let at a cost of $233,800 for the erection of three buildings at the State Hospital, Morganton, which, when completed, will afford room for 500 additional beds. The facilities at all the hospitals, including institutions for the negroes, are being materially enlarged.

OREGON

Hospital Donated to Medical School.—As a memorial to the late Frank S. Doernbecher, his son and daughter have donated $200,000 to the University of Oregon Medical School, Portland, for the erection of a hospital to be known as the Doernbecher Memorial Hospital for Children. Dr. Richard B. Dillehunt, dean of the medical school, announced that the board of regents gratefully accepted the gift. Tentative plans made by the board call for the erection of the hospital on a site just east of the two recently completed units of the medical school on Marquam Hill. Its architecture will be consistent with the medical school building plan.

PENNSYLVANIA

History of Medical Society.—At a meeting of the Fayette County Medical Society, in January, 1922, it was resolved that a history of the society and a medical biography of every physician who had practiced medicine in the county, with his photograph, should be prepared and published in book form. Dr. Jacob S. Hackney, Uniontown, was appointed a committee of one to compile and edit this work. At the meeting of the society, September 3, Dr. Hackney reported the data completed and presented it to the society. The work consists of more than 300 pages and 130 photographs, some of which are of physicians who practiced in Fayette County more than a century ago. The book is now in the hands of the printer. In appreciation of his work, Dr. Hackney was made a life member of the medical society without the payment of dues or assessments, following a resolution offered by Dr. James B. Ewing, the oldest practitioner of the county.

Philadelphia

Personal.—Prof. C. E. Bloch, Copenhagen, Denmark, was a guest speaker at the meeting of the section on general medicine of the College of Physicians of Philadelphia, October 22. His subject was "Diseases Due to Deficiency in A-Vitamines."——George E. Vincent, president of the Rockefeller Foundation, New York City, was the guest of honor of the Medical Club of Philadelphia, October 19.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize of $300, will be made July 14, 1924, provided an essay deemed by the committee of award worthy of the prize shall have been offered. Essays intended for competition may be on any subject in medicine, but cannot have been published; if not in English, they should be accompanied by an English translation, and be in the office of the secretary of the college not later than May 1, 1924. Each essay must be sent without signature, but plainly marked with a motto. It must be accompanied by a sealed envelop having on the outside the motto of the paper, and within the name and address of the author. The Alvarenga Prize for 1923 has been awarded to Dr. Edward P. Heller, Kansas City, Mo., for his essay entitled: "Treatise on Echinococcus Disease."

Pennsylvania University to Extend Field.—An elaborate program for expansion in the field of graduate medicine will be put into operation by the University of Pennsylvania Medical School officials in connection with the Graduate School of Medicine of the University of Pennsylvania. Philadelphia, Scranton, Sayre and Pottsville have been selected as centers from which to work. Medical associations in the cities are cooperating with the university. In Philadelphia the extension work will be conducted Monday, Tuesday and Thursday evenings and Wednesday afternoon. The course will include lectures in psychophysiology, which Dr. Edward Lodholz, professor of physiology at the University of Pennsylvania, will present. The department of neuropsychiatry

will provide six weeks of instruction in clinicopathologic neuropsychiatry to one representative of the medical staff of each of ten of the state's psychopathologic hospitals. Seventy-five physicians from all parts of the world, including men from Switzerland, China, Japan and England, have enrolled in the graduate school, which opened October 20.

TENNESSEE

Personal.—Dr. Leonard D. Murphy, Buena Vista, has been elected secretary of the Carroll County Medical Society to fill the unexpired term of Dr. Grailey H. Berryhill, McKenzie, who has removed to Memphis.——Dr. John W. Ross, Clarksville, has accepted the position of chief surgeon of the United Fruit Company's 125-bed hospital at Quiriqua, Guatemala.

UTAH

Public Health Meeting.—The annual meeting of the Utah Public Health Association was held in Salt Lake City, October 15, under the presidency of E. O. Howard. Dr. Joseph R. Morrell, Ogden, president of the state medical association; Dr. Frederick L. Stauffer, Salt Lake City, president of the state board of health; Dr. Willard Christopherson, health commissioner, Salt Lake City; Dr. Warren L. Lindsay, Salt Lake City, U. S. Veterans' Bureau; Dr. Clarence C. Jensen, Riverton, state superintendent of schools, and Dr. Ralph T. Richards, Salt Lake City, Utah director of the National Association for the Prevention of Cancer, were among those who addressed the meeting.

VIRGINIA

Personal.—Dr. Rudolf Teusler, who was in Richmond at the time of the earthquake in Japan, has returned to Tokyo to aid in reconstructing St. Luke's Mission Hospital, of which he is superintendent. Dr. Teusler states that all the American physicians at the hospital are safe. The foundation of the new St. Luke's Hospital, which had been completed as far as the first floor, was also destroyed.——Drs. William O. McCabe, Thaxton, and Joseph A. Rucker, Bedford, were elected president and secretary-treasurer, respectively, of the Bedford County Medical Society, recently.

WASHINGTON

Fifty-Seven Poisoned by Food.—According to reports from Seattle, seven women are dangerously ill as the result of food poisoning at a luncheon given by the Parent Teachers' Association at Roland School, October 13. More than fifty other persons became ill, but physicians stated that these would recover.

WEST VIRGINIA

Hospital Changes Name.—Drs. Thomas W. Moore and William F. Beckner announce a change in the name of the Moore-Beckner Hospital, Huntington, to the Huntington Eye, Ear and Throat Hospital.

Ohio County Medical Society.—Officers recently elected were installed at the first regular meeting of the Ohio County Medical Society at Wheeling, October 3. Dr. William Turner Morris is president; Dr. Edward S. Bippus, vice president, and Dr. John E. Marschner, secretary. Dr. William H. Guy, professor of dermatology at the University of Pittsburgh School of Medicine, spoke on "Precancerous Dermatoses."

WISCONSIN

Medical Women Elect.—At the annual meeting of the Wisconsin Medical Women's Society in Milwaukee, October 6, Dr. Eleanore S. Cushing Lipitt, Milwaukee, was elected president; Dr. Irene G. T. Stemper, Oconomowoc, and Dr. Ella Chafee Fay, Whitewater, vice presidents, and Dr. Rose Kriz, Milwaukee, secretary-treasurer.

Chiropractic Degree Outlawed.—Persons not licensed to practice medicine, surgery or osteopathy are not permitted to use the letters "D.C.," meaning doctor of chiropractic, after their name, the attorney-general held at Milwaukee, October 13, in an opinion to Dr. John M. Dodd, secretary of the state board of medical examiners.

PHILIPPINE ISLANDS

Personal.—Drs. Leoncio Lopez-Rizal, Philippine Health Service; P. Gutierrez, University of the Philippines Medical School; Herbert W. Wade, health service, and Prof. F. G. Haughwout, Bureau of Science, were appointed to represent the Philippine government at the Fifth Congress of Far Eastern Association of Tropical Medicine at Singapore in September.——The Council of State has recently designated, as pensionados to the United States, Drs. Jose Fernandez, Jose Guidote and Mariano Tolentino for the purpose of doing graduate work in mental disease, public health work and hospital administration.——Dr. Cristobal Manalang, bacteriologist of the Philippine Health Service, represented the Philippine Islands at the Pan-Pacific Scientific Congress in Australia, August 22-September 3.——Dr. Sixto Y. Orosa, chief of the Sulu Public Hospital, has been appointed acting head of the newly created Division of Hospitals of the Philippine Health Service. He will be stationed at Manila.

Public Health News.—The public welfare commission is launching a modern health crusade in the schools of the Philippines. It is hoped to make it a part of the school curriculum. Pamphlets explaining the movement are being widely distributed.——A committee has been formed by Vice Governor Gilmore for the study of the beriberi problem. The report of the committee will serve as the basis of the instructions to be given the delegates who will represent the Philippines at the fifth congress of the Far Eastern Association of Tropical Medicine at Singapore, Sept. 3-17, 1924.——The director of public health has appointed a committee to make plans providing for the maintenance in the insular treasury of a special fund to be known as the pension and retirement fund of the Philippine Health Service, to be recommended to the next session of the legislature.——Following reorganization of the Philippine Health Service and the creation of the office of general inspection, the archipelago has now been divided into five territorial inspection districts.

CANADA

New Requirements for Licensure.—At the annual meeting of the Nova Scotia Medical Board, it was announced that the board now requires of all candidates for licenses to practice in the province of Nova Scotia evidence of preliminary education at least equivalent to the complete senior matriculation of chartered Canadian universities, followed by five years of professional study. The matter of requiring six years of professional study is under consideration. Dr. J. G. MacDougall and W. H. Hattie were reelected president and registrar, respectively.

Society News.—A joint meeting of the Ontario and Quebec sections of the American College of Surgeons will be held in Ottawa, November 22-23, to discuss hospital standardization. A community health meeting will be held at which Drs. George W. Crile, Cleveland, George D. Stewart, New York, Walter W. Chipman, Montreal, and Franklin H. Martin, Chicago, will speak.——The forty-fourth annual meeting of the Ontario Medical Association will be held, June 17-20, 1924, conjointly with the Canadian Medical Association and under the auspices of the Ottawa Medico-Chirurgical Society, in Ottawa.

Care of Mental Cases.—Members of the Canadian National Committee for Mental Hygiene recently made a trip throughout western Canada to lay the foundation for an educational and financial campaign in 1924. Committees were organized in eight large cities; the new institutions, on which the Canadian government has expended more than $5,000,000, were visited. Among noteworthy improvements are: the training school for nurses at the Provincial Mental Hospital, Brandon, Sask.; the organization of a thoroughly equipped occupational therapy division at the Provincial Mental Hospital, Battleford, Sask.; the formation of a division for the care of the feebleminded in Alberta, and the erection of a new occupational therapy building at the Hospital for the Insane, New Westminster, B. C.

GENERAL

Legion of Honor for American Nurse.—Miss Evelyn G. Smally, an American nurse, was made a chevalier of the Legion of Honor, October 4, for distinguished services during the Champagne offensive. General Gouraud, military governor of Paris, conferred the honor.

American Dietetic Association.—Mrs. Octavia Hall Smillie, Andalusia, Ala., was reelected president of the American Dietetic Association at the sixth annual meeting in Indianapolis, October 15-17. Anna E. Boller, Central Free Dispensary, Chicago, was elected treasurer.

American Association of Oral and Plastic Surgeons.—At the annual meeting of the association in Chicago, October 22-23, the following officers were elected for the ensuing year: president, Dr. Thomas L. Gilmer, Chicago; vice president,

Dr. Ernest F. Risdon, Toronto, Ont., Canada, and secretary, Dr. Leroy M. S. Miner, Boston.

American Association of Clinical Research.—At the annual meeting of the Association in Philadelphia, October 13-15, the following officers were elected for the ensuing year: president, Dr. Roger M. Griswold, Kensington, Conn.; vice presidents, Drs. Curran Pope, Louisville, Ky., and Elbert B. Swerdfeger, Denver, and secretary, Dr. James Krauss, Boston.

Mississippi Valley Medical Association.—At the forty-eighth annual conference of the association in Hot Springs, Ark., October 9-11, Dr. Charles A. L. Reed, Cincinnati, was elected president for the ensuing year. Drs. Edwin P. Sloan, Bloomington, Ill., Joseph Louis Ransohoff, Cincinnati, and Charles W. Hanford, Chicago, were among the visiting physicians who gave addresses.

Medical Association of the Southwest.—At the recent annual meeting in Kansas City of this society, the following officers were elected: president, Dr. Williston H. Addington, Altoona, Kan.; vice presidents, Drs. Leonard S. Willour, McAlester, Okla., Joseph D. Becton, Greenville, Texas, Oscar B. Hall, Warrensburg, Mo., and St. Cloud Cooper, Fort Smith, Ark., and secretary-treasurer, Dr. Edward H. Skinner. It was voted to hold the 1924 meeting also in Kansas City. The *Medical Herald and Electro-Therapist* was selected as the official organ of the association.

Influenza Study.—The U. S. Public Health Service, Washington, D. C., started an investigation of influenza in the universities of the country, October 6. Blank forms have been distributed to students, who are requested to fill in their health records and to supplement this information twice monthly through the fall and winter on other blanks to be supplied them. The number of colds, coughs and cases of influenza and pneumonia, and general health conditions as well, will be recorded. Statistics for Southern colleges will be gathered by taking Tulane University of Louisiana as an average.

National Safety Council.—At the twelfth annual congress of the National Safety Council at Buffalo, October 1-5, the following officers were elected for the ensuing year: president, L. A. DeBlois, Du Pont de Nemours & Company, Wilmington, Del.; vice presidents, C. B. Auel, Westinghouse Electric Company, Pittsburgh, in charge of general activities; Marcus A. Dow, executive secretary, Bureau of Public Safety, Police Department, New York City, in charge of public safety; George T. Fonda, Fonda Tolsted, Inc., New York City, in charge of local councils; H. A. Reninger, Lehigh Portland Cement Company, Allentown, Pa., in charge of industrial safety; David Van Schaack, Aetna Life Insurance Company, Hartford, Conn., in charge of public relations, and vice president and treasurer, Homer E. Niesz, Commonwealth Edison Company, Chicago.

American Child Health Association.—At the annual meeting of the American Child Health Association in Detroit, October 15-17, Herbert Hoover, secretary, U. S. Department of Commerce, Washington, D. C., was reelected president of the association for the ensuing year. Among the speakers were: Drs. Haven Emerson, professor of public health, College of Physicians and Surgeons Columbia University, New York City; George E. Vincent, president of the Rockefeller Foundation; John M. Dodson, Chicago; Everett C. Hartley, director of child hygiene, state board of health, Minnesota; Mary Riggs Noble, chief, division of child health, Pennsylvania State Department of Health; Arnold L. Gesell, professor of child hygiene, Yale University Medical School; Mons. J. Maquet, directeur-general de l'Oeuvre de l'enfance, Brussels, Belgium; Frances S. Bradley, director of bureau of child hygiene, state department of health, Arkansas, and Henry F. Vaughan, commissioner of health, Detroit.

American Hospital Association.—The silver jubilee convention of the association will take place in Milwaukee, October 29-November 2, under the presidency of Asa S. Bacon, superintendent of the Presbyterian Hospital, Chicago. Dr. Malcolm T. MacEachern, Vancouver, B. C., is president-elect. An exposition of hospital supplies and equipment, including a complete laundry and kitchen designed for a 100 bed hospital, will be held at the Milwaukee Auditorium. The allied associations—the Protestant Hospital Association, the American Occupational Therapy Association, the hospital council of the American Dietetic Association and the American Association of Hospital Social Workers—will convene in Milwaukee at the same time. Among the speakers will be Mr. E. S. Gilmore, superintendent, Wesley Memorial Hospital, Chicago; Mr. Charles S. Pitcher, superintendent of the Presbyterian Hospital, Philadelphia; Dr. Herman Bundesen, health commissioner of Chicago; Dr. J. H. Kellogg, superintendent, Battle Creek (Mich.) Sanitarium; Dr. Sigismund S. Goldwater, superintendent of Mount Sinai Hospital, New York, and Dr. James B. Herrick, president, Chicago Association for the Prevention and Relief of Heart Disease. The National Hospital Day Committee will have an exhibit indicating what the hospitals of the United States and Canada do on National Hospital Day to win the interest and support of their communities.

American College of Surgeons.—The thirteenth annual congress of the American College of Surgeons opened at the Congress Hotel, Chicago, October 22, with a large attendance. Among the speakers at the opening session were Dr. Harvey Cushing, Boston, the retiring president; Dr. Franklin H. Martin, Chicago, director general, and Dr. John B. McKenzie, New Brunswick, Canada. At the evening session in Orchestra Hall, Dr. Albert J. Ochsner, Chicago, president-elect, was installed, and Dr. George Crile, Cleveland, delivered the John B. Murphy oration in surgery. Dr. Ochsner emphasized the work of the college in the standardization of hospitals of which there are now 1,176 on the list. He said, in part, standardization enables hospitals to eliminate from their staffs men who are hopelessly unfit, but who have stayed on because there was no standard of education, experience, or ethics by which they could be measured. Dr. Crile is reported to have said, "we consider that electricity keeps the flame of life burning in the cell and the flame—oxidation—supplies electricity used in operating the animal," and that the body is made up of twenty-eight trillion cells of which each was a tiny wet battery with negative and positive pole. The brain cells are most positive, the cells of the liver the most negative. Sir William I. de Courcy Wheeler, president of the Royal College of Surgeons of Ireland, was the invited foreign guest. The cornerstone of the John B. Murphy Memorial, to be erected at 44 East Erie Street, was laid October 23, when Dr. William J. Mayo, Rochester, Minn., gave an address. Dr. Mayo is reported to have said that there was a sufficient number of trained surgeons to do the surgical work but that there were a great many engaged in surgical practice who were not properly qualified, and that "the untrained man in justice to the patient, should not undertake surgery." Clinics were held in the leading hospitals and medical schools of the city.

LATIN AMERICA

Pan-American Sanitary Conference.—The seventh Pan-American Sanitary Conference will be held in Havana, Cuba, November 5-15, under the provisional presidency of Dr. Mario G. Lebredo. The sixth sanitary conference of the American republics was held in Montevideo, Uruguay, Dec. 12-20, 1920, when a resolution was adopted for the assembling of the Seventh Pan-American Sanitary Conference.

FOREIGN

Physics and Chemistry Fellowships.—A society of Bologna has founded an endowment of 6,000 francs yearly for an Italian student of physics and chemistry who wishes to do research work in the Curie Laboratory, Paris. The fellowship is endowed for ten years.

London School of Dermatology.—In order to further the study and teaching of dermatology in London, lectures will be conducted on Tuesdays and Thursdays at St. John's Hospital for Diseases of the Skin by the honorary medical staff of the hospital, together with the physician in charge of the dermatologic departments of the twelve London teaching hospitals.

Seventy-Fifth Anniversary of the Amsterdam Medical Society.—The festal celebration of the foundation of the Geneeskundiger Kring of Amsterdam in 1848 was accompanied by an interesting historical loan exhibition, and concluded with a banquet at the Amstel-Hotel. The Amsterdam Medical Society is the Amsterdam section of the Netherlands Medical Association, the daughter being older than the mother.

Mexico and the Institute for Tropical Diseases.—The *Deutsche medizinische Wochenschrift* reports that a party from the public health service in Mexico has been visiting the Institute for Tropical Medicine at Hamburg, to aid in establishing closer relations between the institute and the state of Mexico. The party consists of Dr. Gabriel M. Malda, chief of the Mexican public health service, and Drs. Servando Osornio and Carlos Augurio.

Expedition to Study Elephantiasis.—An expedition will be sent to Samoa by the London School of Tropical Medicine to

study the prevention of elephantiasis and filariasis, diseases which affect 85 per cent. of the inhabitants of the Samoan group. Dr. Patrick Buxton, entomologist to the Palestine government at Jerusalem, will head the expedition, which will leave England, November 15, for two years. Headquarters will be established at Apia.

Maudsley Hospital Courses.—The second part of the sixth course of lectures and demonstrations for the diploma in psychologic medicine opened at the Maudsley Hospital, London, October 8. Dr. Edward Mapother will deliver eight lectures on morbid psychology on Mondays; Dr. Bernard Hart, eight lectures on the psychoneuroses on Mondays, beginning November 5, and Sir Frederick Mott, six lectures on the pathology of mental diseases, on Tuesdays, beginning November 6.

Precautions Against Alastrim.—Notice has been published at Basse Terre, Guadeloupe, that vessels plying between France and the Panama Canal and stopping at Basse Terre and Pointe à Pitre will require all persons sailing from ports in the islands of Guadeloupe, where alastrim prevails, to be revaccinated on board en route and to show a sanitary passport to that effect at St. Nazaire, on landing. Persons not so vaccinated will be subject to twenty days' observation at St. Nazaire.

Belgian Anticancer Congress. — The National Belgian League for the Control of Cancer will hold a national congress in Brussels, November 18-20. The opening session will be addressed by Viscount Paul Berryer, minister of the interior and hygiene. Addresses will be given by Professors Bergonne, Bordeaux; Hartmann, Paris; Depage, and Firket, Liége; Goris and Mayer of Brussels, and others. Frederick L. Hoffman, Newark, N. J., will represent the American Society for the Control of Cancer.

Royal Institute of Public Health.—The council of the Royal Institute of Public Health has accepted invitations from the university and municipality to hold the next congress in Bordeaux, France, June 4-9, 1924, under the presidency of Viscount Burnham. The meetings will be held in the following sections: (1) State Medical and Municipal Hygiene; (2) Naval, Military and Air; (3) Industrial Hygiene; (4) Tropical Diseases; (5) Pathology, Bacteriology and Biochemistry, and (6) Women and the Public Health.

Antitrachoma League.—At the annual congress of the Société française d'ophthalmologie in 1922, it was proposed to form the Ligue contre le trachome, and at the meeting of the Colonial Congress of Public Health at the Pasteur Institute, Paris, in April, the league was definitely established. The first number of the *Bulletin de la ligue contre le trachome* has just been issued and contains an account of the proceedings which led to the formation of the league. The officers elected were: president, Dr. Charles Nicolle; vice presidents, Drs. Morax and Aubaret, and secretary, Dr. Paul Petit, 19 rue de Bourgogne, Paris.

Physicians in Hungary.—According to a report issued by the Hungarian Medical Association there are at present 4,489 practicing physicians in Hungary which has a population of more than 8,000,000. Of these, 2,012 practice in Budapest. The number of physicians is decreasing on an average 225 a year. The number of medical students in the country in 1922-1923 was 6,751. The medical association is advising parents not to encourage their children to enter this overcrowded profession. The distribution of physicians is very uneven; in towns the ratio of medical men to the population is 1 in 350-500, but numerous small provincial towns have no resident physician at all.

Health in New Zealand.—The report of the New Zealand Department of Health for the year ended March 31, 1923, shows that the standardized death rate for the dominion fell from 10.93 per thousand in the previous year to 10.70. The infant mortality rate was only 41.9 per thousand. The director general of health stated that the population of New Zealand has the greatest expectancy of life of any of the leading countries of the world. The death rate from cancer was 8.52 per 10,000, and that of tuberculosis, 6.5.——A recent exhibition of hygiene was held in Wellington.——An analysis of the New Zealand Medical Register shows that the total number of names of registered practitioners has mounted from 969 in 1917 to 1,073 in 1922. The population of New Zealand, exclusive of Maoris, is 1,218,913. The number of births registered in 1922 was 29,000.

School of Nursing for Physicians.—The *Lancet* states that a school of nursing for physicians was opened some months ago at the Pirquet Clinic (Vienna University Clinic for Children), Vienna, for instruction in the every-day care of the child. The physician and the mother work often at cross purposes, through the former's ignorance of domestic exigencies. The program is as follows: Four physicians of the clinic are entrusted with the care of the ward, doing all the nurses' work. At 5:45 a. m., the physicians take over the charge of the ward and must wash, bathe and tidy the children, serve their breakfast, give them medicine, make the temperature charts and prepare them for the morning round of the professor. The night duties at present are performed by a nurse, but will soon fall to the lot of student physicians, who must serve a term of two months in all at the school. The idea has been approved by the medical profession generally. It is contemplated that the new curriculum for medical students, which is under consideration and which will necessitate a year of internship before engaging in practice, might include a course in this school.

Personal.—Dr. Pautrier, professor of skin and venereal diseases at the University of Strasbourg, is delivering a series of lectures at the Notre-Dame Hospital at Montreal.——Dr. F. Lieras and Dr. M. Aya delivered addresses at the recent unveiling of the statue of Pasteur, erected on a prominent street of Bogota, by popular subscription. The entire issue of the *Repertorio de Medicina y Cirurgia* for July is devoted to these and other addresses.——A two volume souvenir compilation of scientific works by the pupils and friends of Dr. Santiago Ramón y Cajal was recently presented to him.——Dr. C. Gram, professor of internal medicine at the University of Copenhagen, has been allowed to retire, on a pension, before quite reaching the age limit.——The Fothergillian medal and prize of the Medical Society of London, England, has been awarded to Sir Arthur Keith.——The first Victor Horsley Memorial Lecture was delivered by Sir Edward S. Schäfer before the Royal Society of Medicine, London, October 25.——The gold medal founded by Sir Gilbert Blane has been awarded by the presidents of the Royal College of Physicians of London and the Royal College of Surgeons of England to Surgeon Lieutenant Commander Julian L. Priston, Royal Navy.——Dr. Adam Patrick, Glasgow, has been appointed to the chair of medicine of the University of St. Andrews, Scotland, to succeed Professor Stalker.——A special triple number of the *Khinische Monatsblätter für Augenheilkunde* has been dedicated to Uhthoff, the ophthalmologist, as a *Festschrift* in honor of his seventieth birthday.——A volume of Virchow's *Archiv* is to be dedicated in the same way to Eugen Fraenkel, professor of pathology at Hamburg and pioneer research worker in various lines, whose seventieth birthday occurred in September.——Prof. Leon Asher of Berne has been elected honorary member of the Harvey Society of New York.——Dr. Santiago Cavengt of Madrid has been awarded the prize founded by Dr. Sarabia y Pardo of Madrid for distinguished work in pediatrics during the year. Cavengt is editor of *Pediatria Española* and has published articles on hysteria and endocrinology in children and on vomiting in infants.——Dr. E. Perroncito, professor of pathology at Turin, retires from his chair this year, having reached the age limit. The *Riforma medica* states that his discovery that the hookworm caused miners' anemia in St. Gothard tunnel, and that salt killed the larvae, allowed the completion of the Simplon tunnel in seven years without a case of miners' anemia. He is an honorary member of scientific societies in many countries and is to preside at the much postponed international congress on comparative pathology that was to have convened in Italy this year.——Many of our European exchanges are paying tribute to Prof. C. Eijkman, of the chair of hygiene at Utrecht, as preparations are being made to celebrate the twenty-fifth anniversary of his incumbency. His research on beriberi, which laid the foundation for our knowledge of deficiency diseases, was done in the Dutch East Indies in the eighties.

Deaths in Other Countries

Dr. **R. A. Reddingius**, professor of pathology at Groningen, aged 66.——The death is reported at Paris of Dr. **Bernardino Mosquera**, president of the faculty of medicine at Caracas, one of the founders of the Academia de Medicina of Venezuela, and official delegate from Venezuela to the Pasteur centennial.——Dr. **F. Holme**, a specialist in otolaryngology at Paris and editorial writer on the *Presse médicale* for many years.——Dr. **T. Veiel** of Cannstadt, recently president of the German Dermatologic Society, aged 75.——Dr. **G. Orfila**, professor of medicine in the University of Quito.——Dr. **J. H. Nilsson**, a medical officer of high rank in the Swedish navy, aged 62.——Dr. **E. de Menezes** of Juiz de Fora, Brazil, to whose initiative are due the Pasteur Institute and many other medical institutions of Minas province.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 8, 1923.

The Crisis in the Panel Service

The crisis in the panel service has at last come to a head. For some time it has led to a controversy in the press and at public meetings between the representatives of the friendly societies alleging that the panel physicians are paid too much and give a perfunctory service in return, and representatives of the physicians stating that the pay is not sufficient. Each side, by deputation and otherwise, has brought pressure to bear on the ministry of health, which is a third controlling party, representing the taxpayer, who has to find a good deal of the money. The prewar capitation fee was about $1.75. With the great increase in prices, including the cost of living, during and after the war, the fee was raised to $2.75, part of the increase being provided for by special grant of $0.50 by the government. On the fall of prices, the physicians after arbitration accepted in 1920 a reduction amounting to 36 cents. But the financial depression due to the war and still more to trade-union exactions, to which the Lloyd George government was prodigally complaisant, not only during the war, for which there was some excuse, but after the war when the most rigid economy was necessary, still continues. Lloyd George's neglect of economy has rendered economy still more necessary to the present government, and it is now engaged in the difficult task of reducing expenditure. At the suggestion of the Geddes committee on economy, the government refused to continue the special grant of $0.50, and the representatives of the friendly societies refused to find it. Hence all the trouble.

The minister of health, after much negotiation with both sides, now offers the panel physicians a capitation fee of $2 for an agreement for three years, or one of 36 cents less for an agreement for five years. In the course of a long memorandum, he states that he accepts the view of the Insurance Acts Committee of the British Medical Association that the rewards of medical practice should be such as to attract the right type of recruit to the profession, and that the remuneration of insurance practice should not compare unfavorably with that derived from private practice of a comparable kind. But he considers that due regard must be had to the advantages of payment at a contract rate, which obviates the risk of bad debts and the labor and expense of collecting fees. Referring to the arbitration award of 1920, he describes that year as a time of optimism and inflation. The earning power of the medical profession, too, was temporarily enhanced on account of the shortage of physicians due to the war. This does not apply now to anything like the same degree; ordinary economic criteria must and can now be applied. What effect, he asks, had the reduction of the capitation fee two years ago by 36 cents on the total number of physicians accepting service? In the eighteen months from January, 1922, to July, 1923, there was a net increase of the panel physicians by 552. The minister refuses to accept the contention of the association that physicians must be secured "against any lowering of their prewar standard of living beyond that entailed by increased taxation." For comparison, he takes the administrative section of the civil service, in which, since the last adjustment of the war bonus, a basic salary of $5,880 now yields a remuneration of $7,000. The reduction to this figure closely corresponds to that which he proposes for the panel service. The minister draws another argument from the investigation of 446 practices of physicians known to be keeping careful records of their attendances. The average number of attendances in 1922 was slightly in excess of 3.5 per insured person. On an estimate favorable to the physician, the ratio of office attendances to visits to the patient would be 2:1. Inquiries from experienced physicians indicate that without overwork this proportion of attendance could be given to 2,000 insured persons, and an equal amount of private work also done. Assuming the private practice to be only equally as remunerative as insurance practice, the physician could earn on the basis of a $2.25 capitation fee an income of $9,000. This income was named by the Insurance Acts Committee of the British Medical Association in 1920 as offering a fair reward for the whole time of a physician. A fall in the cost of living and the expenses of practice has taken place since then. The minister adds that he has been impressed in his discussions with the representatives of the profession and of the friendly societies with the general desire for a development of the present "general practitioner service" into one of the widest scope. He warmly sympathizes with this desire, but he cannot now deal with it. It raises the whole question of the insurance system, the financial position and the practicability of providing finance and personnel for such development.

The reply of the Insurance Acts Committee of the British Medical Association will be handed to the minister by a deputation. As far as is known, his terms will be refused. On the other hand, the representatives of the approved societies are also opposed to the terms, asserting that the physicians should not be paid more than the prewar $1.75. Besides the British Medical Association there is another but much smaller body, called the National Medical Union, which consists of physicians who do not practice under the panel and are entirely opposed to it. They stand for (1) the maintenance of the freedom of the medical profession in its relation to the public and of a corresponding freedom for the public, and (2) the provision of medical service for needy persons and for them only. They are opposed to state control of the profession, and demand radical changes in the present system. So far they have not been able to exert much influence. This is not surprising, for the very fact that they refuse panel service deprives them, to a certain extent, of locus standi in the discussion of its terms.

PARIS

(From Our Regular Correspondent)

Oct. 5, 1923.

The Diminution of Alcoholism

I have referred to the results of two inquiries, instituted by the minister of labor, which point to a decrease of alcoholism among the laborers of Paris and the region of the North (THE JOURNAL, July 21, 1923, p. 227, and Sept. 22, 1923, p. 1035). According to M. Louis Sadoul, counselor of the Court of Appeals at Nancy, this is general throughout France. Continuing his interesting study on criminality since the war, which I discussed in my letter last week (THE JOURNAL, Oct. 20, 1923, p. 1375), M. Sadoul does not hesitate to attribute the diminution of crime, at least in the departments of the East, to the decrease in alcoholism.

In 1913, the total amount of pure alcohol on which tax was paid in French territory as a whole was 1,566,858 hectoliters. In 1921, the total had dropped to 788,839 hectoliters, a decrease of approximately 50 per cent. In reality, the decrease is more than 50 per cent., since the statistics for 1921 include the not inconsiderable amount consumed in the three restored departments of Alsace-Lorraine. The internal tax is imposed not only on beverage alcohol but also on alcohol used in laboratories, in industries, in pharmaceutic preparations, and in perfumes. Just what proportion of this alcohol was used for external purposes it is not possible to determine exactly, but one may assume that this proportion has remained more or less constant, though the trade in

perfumes would seem to have increased. It is therefore quite probable that the consumption of beverage alcohol has decreased more than 50 per cent. The figures for four departments of the East (Ardennes, Meuse, Meurthe-et-Moselle and Vosges) seem to indicate an even greater decrease than for the country as a whole. In Meurthe-et-Moselle the total for 1913 was 22,987 hectoliters; in 1921, 5,629 hectoliters, or a decrease of about 75 per cent. In the department of Vosges, the total for 1913 was 15,282 hectoliters; in 1922, 3,488 hectoliters, a decrease of almost 80 per cent. An improvement may be noted especially in the mountain arrondissements, which were formerly most affected by alcoholism. In the arrondissement of Saint-Dié, the total taxed consumption for 1913 was 6,282 hectoliters; the figure for 1921 was 1,205, a decrease of more than 80 per cent. The same situation is found in the two other departments of the judicial district: Meuse only 2,205 hectoliters, as against 11,609, a decrease of more than 80 per cent.; Ardennes, 16,665 hectoliters, as against 3,949, more than a 75 per cent. decrease. These official figures accord with information secured from the wine merchants and saloonkeepers who were interrogated by M. Sadoul. All stated that their sale of alcoholic beverages had decreased enormously, some reporting a 65 and others a 75 per cent. decrease. In one district of the Vosges which had been formerly known for its large number of alcoholics, where women and children, factory workers and woodcutters had all been in the habit of drinking heavily, the decrease reported amounted to 80 per cent.

While the consumption of alcoholic beverages as a whole has decreased, the consumption of wine has increased. The soldier in the army has learned to drink wine, and the same is true of the numerous refugees from the invaded departments. The war thus served to make wine more popular, especially in the departments where large quantities of beer and "cider" were consumed. Indeed, the consumption of beer has decreased markedly.

M. Sadoul is laboring under no misapprehension as to the causes for the diminution of alcoholism. The causes are by no means purely moral; legislative and economic problems play an important part, more particularly, the prohibition of absinth, of the use of alcohol needed in industry as a beverage, and of brandy made from grain, potatoes or beets *(betteraves)*. Brandy from these sources constituted the pernicious "drop" which sold for two sous and caused widespread intoxication. In addition to the two legislative measures mentioned, in 1920 the tax on pure alcohol was raised from 220 to 1,000 francs per hectoliter. Other taxes, such as the 25 per cent. tax on luxuries, have served to undermine the custom of the "petit verre," while the considerable increase in the cost of brandy production has likewise had an effect. In short, the "drop" for two sous has become a thing of the past, while the "petit verre" of rum or marc, much reduced in size, costs in cabarets at least 75 centimes. The price is higher in more pretentious cafés, in which the average price is 1 franc, or possibly more. It is true that salaries have also been raised, but they do not permit the expenditure of such large sums for liquor as formerly. Along with its many disadvantages, the high cost of living in general has doubtless had some effect in checking the consumption of alcoholic drinks.

Promotions in the Legion of Honor on the Occasion of the Pasteur Centenary

Professor Calmette, assistant director of the Pasteur Institute, and Professor Bergonié of Bordeaux have been made grand officers of the Legion of Honor. Prof. Léon Bernard of Paris, Professor Borrel, director of the Institute of Hygiene and Bacteriology of Strasbourg, E. Forgue, professor of the surgical clinic of the Faculty of Medicine of Montpellier, and René Vallery-Radot, Pasteur's son-in-law and president of the administrative council of the Pasteur Institute, have been made commanders. A large number of collaborators of the Pasteur Institute have been elected officers of the Legion of Honor, and others have been made "chevaliers" of the order. Among the latter are included Drs. Besredka and Weinberg, both of Russian origin, and Drs. Danysz and Pozerski, both of Polish descent.

The Workmen's Compensation Act

Legislation recently promulgated extends the application of the workmen's compensation act to domestic employees.

A Gift to the University of Paris

Mr. George Blumenthal of New York has recently presented to the University of Paris 250,000 francs, which is placed at the disposal of the administrative council of the university to be used in the interests of science, education and art.

MEXICO CITY

(From Our Regular Correspondent)

Oct. 7, 1923.

Hookworm Disease

The Institute of Public Health has just published a pamphlet by Dr. Nicolas Leon, containing references to hookworm literature published in this country, as well as notes on the geographic distribution of the disease. He points out that hookworm infection has long been known to Mexican clinicians; Dr. J. G. Lobato called attention to the disease in 1850, and Dr. M. F. Jimenez lectured on it at the medical school. The first printed reference appears in a thesis by Dr. Lobato, published in 1871. The same author reverted to the subject in a paper in the *Gaceta Medica de Mexico*, in 1875. At that time the patients with miners' anemia were called "maduros" (ripe)—maybe because their color resembled that of ripe fruits—and the disease was attributed to the "deleterious atmosphere of mines." Manuell succeeded, in 1902, in demonstrating the cause of this anemia by finding hookworm ova in the patients' stools. At this time the patients were no longer called "maduros," but were considered to be suffering from chronic malaria. As regards geographic distribution of the disease, available data are rather incomplete. The reports sent from several places read "probably exists," which shows that no laboratory tests were made to verify the suspicion. An extensive survey by experts would be necessary in many places to determine the prevalence of the disease. This would also be the first step toward its control. The last reference in Dr. Leon's paper is to the description by Dr. Neftali Rodriguez of his experience with carbon tetrachlorid in hookworm disease.

Medical Legislation

Two bills relating to medical matters have been introduced recently in the house of representatives. The first provides for autonomy or self-government of the national university. For a long time, this institution has been a victim of politics; the secretary of education is charged with the duty of appointing all professors, prescribing or approving curriculums, and preparing the budgets of the several schools. In earlier times, each school had its own funds, derived largely from bequests. These funds have been seized in economic crises by several administrations, and now the schools are supported by the government and are at the mercy of the secretary, who often may not possess the necessary qualifications.

The other bill, dealing with immigration, has been introduced by the government. In addition to other provisions, the bill forbids the admission of alien prostitutes—now on the increase—and also of female minors unless accompanied by parents or guardians, who must prove their moral integrity. If approved, the bill will have an indirect influence on the prevention of venereal diseases. It will also place Mexico

on a par with other civilized countries. In spite of the obvious advantages of these bills, should they be placed on the statute books, it is surmised that they will not be put into force for a long time.

National Academy of Medicine

The Academy of Medicine began its sixtieth year of existence, October 1. The occasion was duly celebrated at the medical school. The rector of the university, Mr. E. A. Chavez, LL.D., presided. As customary, the secretary, Dr. Eliseo Ramirez, read the annual report. The report was noteworthy because of the energy with which the secretary attacked those physicians who, either from a gullibility hardly befitting members of the academy or from various motives, had dared to exhibit cases of cancer said to have been cured with the "oscilloclast," or to mention diagnoses made with the "reflexophone." These physicians, it was stated, must have known that unbiased and competent persons, after studying the new and so-called "miraculous" method, had declared it to be fraudulent.

The dean of the medical school and Dr. Florestan Aguilar of Spain attended the meeting as guests of honor. At the election, Dr. Fernando Ocaranza was appointed vice president, and Dr. Jesus Arroyo treasurer and editor of the *Gaceta Medica de Mexico*. Some amendments were made to the existing rules and regulations, such as the creation of a perpetual secretary; an increase in the number of members from sixty-five to eighty-two; the organization of a section of physiotherapy; the suppression of the per diem formerly received by members; the creation of a membership fee of $5 a month; the voluntary withdrawal, after fifteen years' service, of active members, who become honorary members; and placing the editorship of the *Gaceta* in charge of one person instead of a committee.

Honors for American Physicians

October 3, the Academy of Medicine unanimously elected as honorary members Dr. W. J. Mayo of Rochester, Minn., and Dr. A. J. Ochsner of Chicago. This was not only a tribute to the scientific accomplishments of the two surgeons, but also an expression of the great appreciation in which they are held by Mexican physicians.

Spanish Physician in Mexico

Dr. Florestan Aguilar, a prominent Spanish physician and odontologist, recently spent a few days in Mexico. During his stay, he gave three lectures, one on aid to Russian professionals; another on the relation between dental troubles and general diseases, and the last, on mouth hygiene. After visiting medical institutions, Dr. Aguilar left for New York, on his way to Germany. On returning to Madrid, he intends to bring about closer relations between Spanish and Mexican physicians. Dr. Aguilar was also appointed an honorary member by the Academy of Medicine.

Personal

Dr. E. Pous Chazaro has been appointed editor of the *Revista de Ciencias Medicas*, the organ of the army medical corps.——Dr. U. Valdes, a prominent Mexican surgeon, has left for Chicago to attend a medical meeting.——Dr. L. Madrid Mendizabal has been appointed secretary of the medical school.——Charges against Dr. R. Tamez, governor of the state of Nuevo Leon, have been filed with the house of representatives.——In the last elections, Dr. G. Hurtado Suarez was elected governor of the state of Colima, a position once held by his father, also a physician.——Dr. J. Siurob, the defeated candidate for the governorship of the state of Queretaro, has registered a protest in the courts of justice. ——Dr. R. Ortega, a corresponding member of the Academy of Medicine, has died.——Dr. R. Tapia Fernandez, the laryngologist, has returned from Europe.——Dr. A. Vallarino, a former professor of the preparatory medical school, has been appointed superintendent of the institution.——Dr. F. Reyes, a member of the superior board of health, has left for Europe to study the methods used in the fight against cancer.——Dr. E. I. Vaughn and Dr. A. M. Walcott, of the International Health Board, and members of the yellow fever commission, have been sent to Brazil. Their departure is much regretted both because of their services and because of their personal charm.——Dr. A. Urrutia, former dean of the medical school and secretary of the interior, who has resided for several years at San Antonio, Texas, returned to Mexico, but left immediately, because of the charges preferred against him.

Radio Propaganda

In view of the development of radio service in Mexico and the interest shown by the people, one of the transmitting stations in this city (under the war and navy department) has decided to include in its weekly programs a health number, placing the matter in charge of the Perrin Laboratories. The first lecturer was Dr. T. G. Perrin, a professor in the Army Medical School, who discussed the danger involved in the use of water from barrels.

BELGIUM

(From Our Regular Correspondent)

Oct. 1, 1923.

Hematosis and Shock

The Royal Academy of Medicine has awarded the Alvarenga prize to Dr. Baruch, author of an important contribution on hematosis following surgical shock. This problem was much studied during the war, and, just recently, Quénu, Duval and Mocquot presented an exhaustive paper on the subject before the International Congress of London. The contribution of Baruch, which has been thus favorably recognized by the academy, deals exhaustively with the literature and records experimental work of a high order. He ascribes all the phenomena of shock to a primary disturbance of hematosis. In shock the venous blood is and remains red. The metabolic activity of the tissues as a whole is retarded, with consequent hypothermia and lessened production of carbon dioxid. The latter causes the red color of the venous blood, as is clearly established by the low carbon dioxid content of the blood. The author demonstrated that hemoglobin, which has a constant absorptive capacity, may be influenced as regards its respiratory value by various external factors. He has studied the oxygen fixing capacity of the blood during shock. By the micro-aerotonometric method of Krogh, he has shown that the blood of the carotid artery contains considerably less oxygen than is fixed by the blood of a normal subject. Shock, therefore, is characterized by permanent diminution of hematopoietic capacity. This diminution is not due to an extrinsic toxin but to an alteration in the hemoglobin, which causes the coloring substance of the blood to lose part of its essential function. According to this interpretation, shock is a hemo-intoxication.

Malaria on the Congo

I referred in a previous letter to the first results of the antimalaria campaign in the Congo region, and especially to the encouraging results in the treatment of trypanosomiasis. Sanitary movements in other fields are taking on more and more importance. Elizabethville deserves special mention. The hospital for Europeans is gradually being completed. During the past year, an operating room, a tuberculosis ward and a delivery room have been added. A rest room for nurses is in process of construction. A ward for infectious diseases, and modern kitchen and laundry equipment are soon to be provided. Furthermore, toward the end of the year, a large hospital for natives will be opened in the same city.

As the result of these improvements, together with the activities of the special missions, a marked decrease in malaria has been noted, especially at Elizabethville. An endeavor is being made to produce similar results throughout the colony, for which the remarkable success in Panama serves as an inspiration. With this object in view, a new mission has just left for Ilebo.

Congress of Pediatrics

The third Congress of Pediatrics of French-speaking nations will be held soon at Brussels. The program will include topics of special and immediate interest: Prolonged Pneumonia in Childhood, by Dr. Charles Gardère of Lyons; Medical Treatment and Instruction of Abnormal Children, by Dr. Decroly of Brussels; the Diagnosis and Treatment of Intestinal Invagination, by Dr. Raphael Massart of Paris. In addition, a number of communications have been announced: Pneumonia in Childhood, by Mouriquand, and the Prophylactic Influence of the Grancher Movement, Dr. Armand Delille of Paris.

Spina Bifida Occulta and Pes Cavus

Before the Société medico-chirurgicale of Liége, Dr. Delrez reported recently some observations on pes cavus in relation to spina bifida, which were rendered possible through the application of roentgenography. These puzzling cases may be unilateral or bilateral, and present, at first, no obvious evidence of involvement of the organs of locomotion. Their pathogenesis often remains obscure, and, consequently, the treatment is difficult.

The epidural injection of an iodized oil preparation assists in the diagnosis of spina bifida, in which it forms a large accumulation. Study of these cases throws light on the pathogenesis of pes cavus, which, in fact, results from a monoplegic dystrophy.

The Crusade Against White Lead

In several letters I have referred to the activities of various societies, representing both employers and workmen, in the crusade for the suppression of white lead. I have mentioned also the untiring efforts of the Red Cross in this direction. The outcome of this propaganda has been that a law has been drafted to regulate the use of white lead, and white paints and pigments containing lead. The bill conforms with the conclusions reached by the technical commission created in 1922 by the government. The bill is also in accord with the convention proposed by the third International Conference of Labor, held recently at Geneva. The essential features are: prohibition of the use of white lead for interior decoration, and prohibition of dry rubbing or scraping white lead paint. Furthermore, the sale to, or fraudulent purchase by, private individuals of white lead and lead-containing paints is prohibited.

Congress of Professional Medicine

The annual congress of professional medicine organized by the Fédération médicale belge was held this year at Namur. The congress dealt more particularly with the regulation of midwifery. A request was made to the government that no obstetric establishment be allowed to operate unless the physician or the midwife in charge receives a permit from the minister of public health. Such authorization, which would be given only with the advice of the medical commission for the province, should be revocable at any time on the receipt of appropriate evidence from this commission. The congress declared that it was eminently desirable that midwives be encouraged and protected in every way possible, and that a campaign be launched to improve the position and status of midwives. With this object in view, scholarships should be created, and their privileges should be extended to permit them a wider range of activity.

VIENNA

(From Our Regular Correspondent)

Sept. 16, 1923.

The Problem of the Deaf and the Deaf Mute

The number of deaf mutes in this country is not definitely known, but is estimated at about 5,000, or less than 1 per thousand of the population. But the number of deaf persons, i. e., those who lost their hearing after having learned to speak, is much higher, and has been markedly increased by the war. Not only shell shock, but actual injuries to the external or conducting apparatus or to the nerves, has resulted in relative frequency of deafness in persons who served at the front. Until lately there was little done in the shape of organized welfare care for these patients. But with the formation of a society called "Vox," which has assumed the task of assisting the deaf and deaf-mute, a long step forward has been made. The existing schools and institutions for deaf mutes cooperate with this society. It has been ascertained that the majority of the inmates of deaf-mute institutes take up handicraft, (printing, painting, shoemaking, tailoring, carpentering) or agricultural work. It is interesting to find that they are not much handicapped by their defect; they frequently marry and can support a family. Intermarriages are frequent; and the offspring of these unions are not as a rule deaf mutes. Consanguineous marriage has not the overwhelming importance as an etiologic factor of deaf mutism, in the opinion of two leading experts, that has been ascribed to it by so many authors, but rather the defective germplasm when both parents are affected. Persons who have become deaf later in life (otitis media, labyrinth disease, syphilis, meningeal affections, traumatism) find the problem of vocation more difficult the later in life hearing is lost. Efforts to produce an apparatus for the ear as effective as a lens for the myopic or hypermetropic eye have been futile. The "Vox" endeavors to enable these unhappy people to secure jobs and to earn an independent living by conducting lip reading classes, by training them in handicrafts adapted to their social position before the loss of hearing, and by promoting public interest. For instance, an effort has been made to introduce a badge bearing the inscription "deaf" to be worn in conspicuous letters around the arm, in order to protect the bearer to some extent from the dangers of street traffic. It has also been suggested that the pitch of automobile horns be standardized to make them audible to the majority of persons who are not totally deaf. Deaf people and deaf mutes should not crowd into towns, and after leaving the training schools should receive additional instruction from time to time. The fate of women so afflicted is a little less sad. Often they can make a decent living as dressmakers or housewives, and they marry more often than one would expect. On the other hand, a deaf person often becomes distrustful, jealous and unsociable, and thus is most embarrassing to friends.

Medical Inspection of Public Schools in Austria

In the systematic after-care of children, which has been instituted by the Austrian ministry of health, a prominent part is played by the regular examination and medical control of the school children. Elementary schools, the so-called continuation schools and the "gymnasiums" or higher schools attended by young people of both sexes from 12 to 18 years of age, are visited regularly by specially trained school physicians. In a report on the work done by this branch of the medical staff of the ministry, some interesting figures are given. Three years ago, 6,840 children (in eight schools) were examined by seven physicians. The most recent report deals with more than a quarter million children distributed in 350 schools in Vienna and other larger communities of the republic, 46 per cent. boys and 54 per cent. girls. Com-

pared with the data found in the course of examinations for "famine relief" four and five years ago, there has been a distinct turn for the better. At that time the school children, who were the first recipients of the free meals supplied, were classified as underfed in from 70 to 80 per cent. of those examined, only 5 per cent. being reported as "satisfactory." The school report for the years 1922-1923 indicates that no less than 37 per cent. of the children examined were above the average for weight, height and general strength; only 7 per cent. were found to be weakly. In districts inhabited by laborers, the conditions are not so good, as the percentage of unemployed parents is rather higher than it was two years ago; in "bourgeois" as well as in rural districts, the health figures are a little better. Among pathologic conditions discovered, carious teeth, adenoids and enlarged tonsils rank first. Few children showed a "clean" health ticket. An unexpectedly large proportion of girls had deformities due to faulty posture. Slight curvatures of the spine were frequent in the upper grades (13 to 16 years), but they seem to be outgrown later. Ocular defects, chiefly myopia, were encountered in 5 per cent. of the city pupils, less in the country. Even in the lowest grades, such defects, including hypermetropia, were found, which shows that eye work alone cannot be held responsible for the defects in refraction. Tuberculosis of manifest type is rare in schools—no doubt because such children are kept at home in bed. But scrofula was noted in 4 per cent., especially in the country. Surgical tuberculosis and lupus were also rather rare.

Much attention has been paid to gymnastics and sports. A series of examinations of school children immediately after a game of football, a swim, or one of the excursions in which our schools often indulge, revealed no instance of harmful effect. Among the many suggestions made by the school physicians one is important: The necessity for standards of ventilation, heating, illumination and cubic air space for classrooms, which will no doubt be followed in future buildings. The average daily number of hours of teaching has also been considered by one contributor. While children up to 10 years should not be subjected to more than from twenty to twenty-four hours a week (three or four daily), the age-group of 10 to 14 may have up to twenty-six hours weekly. Five hours daily (except Sundays) will be found to be too much for a protracted period and will cause anemia, one of the most frequent complaints in the girls' classes. Especially about the age of puberty, girls should not be required to sit too long in the classroom. Boys seem to suffer less from this requirement.

Postgraduate Courses in the Fall for Rural Practitioners

The Vienna medical faculty opens its tenth series of postgraduate classes with twenty lectures devoted to subjects needed by rural practitioners. The courses are condensed into a fortnight's work, and include chiefly ophthalmic, rhinolaryngologic, otologic and psychiatric problems, besides three lectures on special subjects pertaining to diseases of children and two classes on modern cardiotherapy and diseases of the liver. Physicians attending these courses will be housed in the hospital of Vienna, and all facilities are afforded them to keep abreast of the trend of modern medicine. The cost of the classes is defrayed from a grant made conjointly by the ministries of education and public health, and are open to Austrian physicians only. Other physicians wishing to attend the lectures are charged a special fee, amounting to about $70, which does not entitle them to free lodging.

Two Unusual Cases of Addison's Disease

Professor Kreidl recently demonstrated specimens from two cases of suprarenal disease at a meeting of the medical society which presented some unusual features. A woman, aged 56, who was thought to be suffering from cardiac insufficiency and cholelithiasis, became asthenic and complained of severe pains in the legs and perineal region. She looked a little bronzed, but not markedly so. Physical examination revealed nothing to explain her condition except an increase of erythroblasts, with marked polychromatic staining. She died suddenly on the day after this first examination in the hospital. Necropsy revealed a small carcinoma of the gallbladder, numerous metastatic deposits in the portal and retroperitoneal glands, a large secondary mass in the left suprarenal gland, numerous deposits in the bones and in the lymphatics of both lungs—a rare finding at this stage. The unusual blood finding, which is not consistent with the diagnosis of Addison's disease, is explained by the metastatic tumors of the bones, while the slight discoloration and the weakness was due to the secondary destruction of the suprarenal gland.

A strong, stout man, aged 47, also complained of weakness and pains in the lower limbs. No change was found except a slight "bronze" color of the face, hands and shoulders. This patient also died suddenly. At the postmortem examination tuberculosis of both suprarenals, of long duration, was discovered, without any active tuberculous focus elsewhere. The adynamic condition and the discoloration were the only indications for the correct diagnosis. The sudden death, which is rare in Addison's disease, was not explained by the pathologic findings; examination of the brain did not reveal anything.

Death of Professor Heitler

With the decease of Dr. Moritz Heitler, professor of materia medica in Vienna, the last member of the group of physicians who helped to build up the reputation of Vienna as the Mekka of medicine has passed away. Born seventy-four years ago, he was influenced to take up the study of medicine by the rapid progress in knowledge and the scientific attitude of medical friends. He studied chiefly the physical side of our art, and physiologic experimentation with pharmacologic substances was his hobby. He studied the action of drugs on the heart and published numerous small but important contributions to the literature of cardiac pathology and therapeutics. He built up a practice, but he did not keep up to date, his scientific position was slowly undermined, and he fell into oblivion. Recently he published some experimental work on nutrition during war time, and on cardiac reflexes due to ingestion of various condiments and foods; this, however, aroused but little interest. A large number of foreign pupils will regret to learn of his death.

Death of Dr. Frits Schlemmer

A few days ago, Dr. Schlemmer, one of the youngest specialists on laryngorhinology of the university, died after a short illness from the effects of appendicitis. Laryngology loses in him an energetic and industrious research worker, whose special knowledge of the pathology of the tonsils has commanded general recognition. Though under the age of 40 years, he succeeded in obtaining an influential position both as teacher and as surgeon in this city. Laryngology seems to be especially unfortunate in Vienna. No less than six men devoted to this specialty have died here within the last three years, 10 per cent. of the total: Chiari, Koschier, Roth, Teuzer Herrenheiser and Fein; now the seventh follows this sad series. He will be remembered by many physicians in the United States who attended his classes at the Chiari and Hajek Clinic for nose and throat diseases.

Overcrowding

Overcrowding, proportionate to the scarcity of housing, has commanded the attention of medical circles ever since the war. The municipality of Vienna has lately developed efforts in this direction, has erected a number of public lodging

houses, and has encouraged private citizens to erect buildings of this kind. Private enterprise has been stimulated by grants, by exemption from taxes and rates; and the movement known as "allotments" or "garden houses," called here "Schrebergarten" has resulted in the formation of definite colonies of small houses or cottages ("Siedlungshäuser") that have been built under municipal supervision according to a definite plan. The board of health has drawn up the following rules for prospective dwelling house societies: The aim must be to house families in cottages, not in flats; for industrial centers, small colonies, easily accessible to transportation and near the place of occupation, are required; for others, rural colonies are advisable, but the dwellers must have some knowledge of agricultural requirements. The board recommends a cottage, with at least one story above the ground floor, or a two-family cottage, as most economical. The construction material of choice should be clay, cement or impregnated timber. The height of the rooms should not be less than 7 feet, and an area of at least 90 square feet to each room is advisable. Regulations for sewage disposal and toilet facilities are outlined clearly. The American system of labor-saving kitchen devices, as well as cupboards and wardrobes built into the walls, is strongly recommended; heating arrangements must be adapted to local conditions (gas or electricity). Bathing facilities are strongly recommended. Already a marked improvement from the difficulty of finding room for the increasing population has taken place in this city, although the number of colonies is as yet small as compared with the actual needs.

BERLIN

(From Our Regular Correspondent)

Sept. 29, 1923.

Prohibition of Alcohol

In August, a conference was held in Hamburg to discuss the problem of prohibition of alcoholic beverages, in which representatives of all organizations interested in the passage of such legislation took part. After discussion of the questions at issue, the "Ausschuss für das Alkoholverbot in Deutschland" (comittee on prohibition in Germany) adopted unanimously the following resolution:

1. We welcome the present draft of a federal law regulating the dispensing of spirituous beverages, in that it recognizes the principle of local option or the right of the commune to regulate the liquor traffic within its borders, but we regret that the application of the law should have been surrounded with so many difficulties. In the interest of the important problem as to how Germany can best be freed from the pernicious scourge of alcoholism, the right of the people to determine its own laws should be given full sway.
2. In the present scarcity of food, it is regrettable that immense quantities of foodstuffs grown on German soil are either used here or exported abroad for the manufacture of alcohol or alcoholic beverages. We hold that emergency legislation is needed immediately to put a stop to this economic waste and preserve the lives of hundreds of thousands of persons.
3. Since the welfare of the masses is more important than any possible damage to special interests, every effort should be made to transfer men engaged in the production of alcohol to other needed forms of occupation. By lectures and other means of public education, influence should be brought to bear to effect such changes in our industries as will make it possible to utilize profitably our resources in fruit and grain without converting them into alcohol.
4. Systematic instruction should be given in the schools, which will teach the coming generation to protect itself better than former generations against the dangers of alcoholism.
5. Now that the first reliable reports on the favorable effects of the operation of the prohibition law in the United States are available, the question of a general prohibition law for Germany should receive serious consideration.

Health and Vital Statistics

The birth rate for the large cities of Germany for the first three months of 1922 was 18.6; for the corresponding period of 1923 it was 17. The mortality rate for these periods was, in 1922, 15.5; in 1923, 14.4. The number of live births in the second quarter of 1923 was only 15.8, as against 18.5 the ptevious year; the number of deaths was 12.7, as compared with 13.5 the year preceding. Infant mortality was 1.9, as against 2.3, per thousand of population. Mortality from tuberculosis was 1.91, an increase over the rate for 1922 (1.80). Affections of the respiratory apparatus and the gastro-intestinal tract have decreased in 1923, and the incidence of infectious diseases has continued low. With the exception of the slowly increasing mortality from tuberculosis, mortality conditions for Germany during the first six months of the year were somewhat more favorable than the previous year but not quite so good as in 1921. Conditions as affecting children are revealed by the school report for the city of Fürth in Bavaria for the school year 1922-1923. Fürth is a city of medium size, with a strongly industrial population. The country surrounding it is inhabited mainly by an agricultural population. Living conditions are, therefore, much better than in many parts of Germany. In considering statistics from such a city, one should bear in mind that the findings will naturally be more favorable than conditions in Germany as a whole would lead one to expect.

The results of the examination of 721 school children of the first grade in Fürth were as follows: The state of nutrition was good in fifty children, or 6.9 per cent., as against 4.5 per cent. the previous year. Only 82.3 per cent. were in an average state of nutrition, as compared with 89.3 per cent. the year preceding, and 10.7 per cent. were in a poor state of nutrition, a marked increase over the findings for the previous year (6.2 per cent.). Another sign of the times is the fact that sixty-one cases of nervous disturbances of heart activity were reported. Furthermore, there were eighty-three cases of rickets. Most frequent (515 cases) were small and medium sized swellings of the glands of the neck and jaws, presumably due to insufficient or improper food. The same manifestations were found in children of the second to the eighth grade. A number of cases of tuberculosis and epilepsy were found. Conditions of nutrition were much worse than in the previous year. Because of the progressive depreciation of the mark, shower baths could be provided only to a limited extent. For the same reason, the policlinic in the schools had to be abandoned. The custom of providing a glass of milk during the forenoon for the weakly and needy children had to be given up. However, the welfare centers were able to give 205 children suspected of tuberculosis an extended outing in the woods. A number of other children were installed in a school in the woods, and thirty-seven were placed in various homes where it was hoped their health might be built up.

Marriages

LESTER P. MARTIN, Mocksville, N. C., to Miss Frances Helen Bahnson of Farmington, August 14.

MARK SUTPHIN, Logan, W. Va., to Mrs. Laura Miller Walters, of Huntington, recently.

HAROLD JAMES CANNON, Milwaukee, to Miss Mary Finnegan of Chicago, October 13.

EARL R. MCCARTHY, Chicago, to Miss Elizabeth McEwen of Winnetka, Ill., October 20.

BLAINE WILSON CLAYPOOL to Miss Ruth Eloise Henninger, both of Chicago, October 27.

ARTHUR J. COLE to Miss Hazel F. Copeland, both of Holbrook, Mass., October 8.

EDMOND SOUCHON to Miss Marie Estoup, both of New Orleans, October 25.

ROBERT NEWELL LARIMER to Miss Miriam E. Chase, both of Iowa City, recently.

LINDLEY V. SPRAGUE to Miss Ruth Baker, both of Detroit, October 26.

BENJAMIN LEVINSON to Miss Rae Wind, both of Chicago, October 7.

Deaths

Henry Ross Tuley ● Louisville, Ky.; died, October 21, of heart disease. Dr. Tuley was born in Louisville, 1870, and graduated from the Medical Department University of Louisville, 1890; the New York Polyclinic Medical School, 1891, and the Kentucky School of Medicine, Louisville, 1894; following graduation he was resident physician at the New York Infant Asylum and the Sloane Maternity Hospital, New York. At the time of his death, Dr. Tuley was dean and professor of pediatrics at the University of Louisville Medical Department; superintendent of the Louisville City Hospital and on the staffs of the Home for Friendless Women, the Norton Infirmary and the Masonic Widow's and Orphans' Home. He was chairman of the Section on Diseases of Children of the American Medical Association, 1898-1899, and a member of the House of Delegates, 1904, at which time he was a member of the Reference Committee on Sections and Section Work. Dr. Tuley was for twenty-five years secretary, and 1922-1923 president of the Mississippi Valley Medical Association. Among his well known works are "Obstetrical Nursing," "Pediatrics" and "Diseases of Children."

Luigi Celano ● New York; Columbia University College of Physicians and Surgeons, New York, 1913; member of the New York Pathological Society; instructor of pathology at the University and Bellevue Hospital Medical College, New York; also a lawyer; on the staffs of the Harlem and Italian hospitals; aged 37; died, October 11, of streptococcic meningitis, resulting from an infection contracted while operating.

William S. Frost ● Spokane, Wash.; University of Minnesota Medical School, Minneapolis, 1904; member of the American Academy of Ophthalmology and Oto-Laryngology; served in the M. C., U. S. Army, in France, during the World War; aged 46; died, September 29, of injuries received when the automobile in which he was driving was struck by a train, August 20.

John Linn Good, Harrisburg, Pa.; Medico-Chirurgical College of Philadelphia, 1915; member of the Medical Society of the State of Pennsylvania; served in the M. C., U. S. Army, in Mexico and during the World War; formerly on the staffs of the Stetson, Children's, and Maternity hospitals, Philadelphia, and the Harrisburg Hospital, where he died, October 2, aged 33.

Thomas Joseph McGuire, Parkersburg, W. Va.; Baltimore (Md.) Medical College, 1897; member of the West Virginia State Medical Association; served in the M. C., U. S. Army, during the World War; formerly on the staffs of St. Joseph's and the City hospitals; aged 53; was killed, September 28, when thrown from his automobile.

Richard Eden Walker, New Westminster, B. C., Canada; Trinity Medical College, Toronto, Ont., 1888; L.R.C.P., L.R.C.S., Edinburgh, and L.F.P.S., Glasgow, Scotland, 1888; president of the British Columbia Medical Association, member and past president of the Medical Council of Canada; aged 58; died, August 25.

Ben Barret Griffith ● Springfield, Ill.; Rush Medical College, Chicago, 1882; Medical Department of Columbia College, New York, 1885; formerly on the staff of St. John's Hospital; for fourteen years member of the city board of health; aged 62; died, October 6, at Colorado Springs, Colo.

Alma Evelyn Fowler, Taunton, Mass.; Tufts College Medical School, Boston, 1917; member of the American Psychiatric Association; formerly on the staff of the Taunton State Hospital; aged 37; died, September 29, at the Boston City Hospital, of illuminating gas asphyxiation.

Frank William Searle ● Portland, Me.; Medical School of Maine, Portland, 1889; formerly superintendent of the Maine Eye and Ear Infirmary; for many years secretary of the state board of registration of medicine; aged 69; died, October 13, following a long illness.

William Roe Murphy, Los Angeles; College of Physicians and Surgeons, Los Angeles, 1918; member of the California Medical Association; on the staff of the Los Angeles General Hospital; formerly member of the school board; aged 54; died, October 7, of heart disease.

Alfred H. Coleman, Tacoma, Wash.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1890; member of the Washington State Medical Association; past president of the Pierce County Medical Society; aged 61; died suddenly, October 3, of heart disease.

Charles Frank Connor ● New Bedford, Mass.; Medical Department of Columbia College, New York, 1895; formerly on the staffs of the Worcester City (Mass.) Hospital and St. Luke's Hospital, New Bedford; aged 50; died suddenly, October 1, of heart disease.

Arthur Calvin Rhine ● Captain, M. C., U. S. Army, Manila, P. I.; University of Illinois College of Medicine, Chicago, 1912; formerly a practitioner in Iowa; aged 49; died, September 30, at Camp Stotsenburg, of a self-inflicted bullet wound.

Joseph Robert Hora, Luverne, Ala.; Medical College of Alabama, Tuscaloosa, 1887; member of the Medical Association of the State of Alabama; formerly county health officer; mayor of Luverne; aged 63; died, September 28, of septicemia.

Conrad Berens, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1883; member of the Medical Society of the State of Pennsylvania; for thirty-one years on the staff of the Wills' Hospital; aged 64; died, October 6.

John Paxton Ward ● Vevay, Ind.; Medical College of Ohio, Cincinnati, 1883; past president of the Switzerland County Medical Society; aged 63; died, October 1, at St. Mary's Hospital, Rochester, Minn., following an operation.

Herbert G. Shobe ● Jefferson City, Mo.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1898; aged 52; was found dead in his office, September 30, with a bullet wound through his head.

Charles Leonard Smith ● Independence, Kan.; State University of Iowa College of Medicine, Iowa City, 1904; past president of the Montgomery County Medical Society; aged 57; died suddenly, October 3, of heart disease.

Claude De Vere Mulbury, Windham, N. Y.; Baltimore (Md.) Medical College, 1898; member of the Medical Society of the State of New York; coroner; aged 50; died suddenly, September 5, of asthma and heart disease.

Rollin G. Knapp, Chicago; Chicago Homeopathic Medical College, 1893; Rush Medical College, Chicago, 1896; Hahnemann Medical College and Hospital, Chicago, 1905; aged 64; died, October 12, of myocarditis.

Stillman Perry Getchell, Wolfeboro, N. H.; Berkshire Medical College, Pittsfield, Mass., 1865; member of the New Hampshire Medical Society; Civil War veteran; aged 87; died, September 30, of senility.

Thomas Jefferson Wingo, Toccopola, Miss.; Vanderbilt University Medical Department, Nashville, Tenn., 1880; formerly a member of the state legislature; aged 68; died, August 20, of heart disease.

Fred A. Axline ● Fultonham, Ohio; Medical College of Ohio, Cincinnati, 1895; for several years county coroner; aged 52; died, September 25, of a self-inflicted bullet wound, while suffering from ill health.

Isaac Clarence Sharp, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1885; formerly on the staff of the Montreal General Hospital; aged 67; died recently, at Ottawa, Ont.

Clinton Reach Ankeney ● Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1894; on the staff of the Methodist Episcopal Hospital, where he died, September 30, aged 57.

William Lafayette McClendon, Hollywood, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1894; aged 51; died, September 21, at St. Thomas Hospital, Nashville, Tenn., of Addison's disease.

Thomas Buckhead Reardan ● Oroville, Calif.; Medical Department, University of California, San Francisco, 1882; county physician; aged 63; died suddenly, September 28, of heart disease.

Archibald Warren Titsworth, Marion, Ohio; Medical College of Ohio, Cincinnati, 1896; member of the Ohio State Medical Association; aged 52; died, October 6, of ulcer of the stomach.

Byron J. Ormsby, Norwich, N. Y.; University of Michigan Medical School, Ann Arbor, 1868; member of the Medical Society of the State of New York; aged 76; died, October 3, of senility.

William Junius Bulloch, Belhaven, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1858; founder of the town of Belhaven; aged 89; died, October 2, of senility.

James Greenfield Scott, Seaforth, Ont., Canada; University of Michigan Medical School, Ann Arbor, 1869; aged 81; died, August 25, of injuries received in an accident.

Charles W. Wainwright ● Princess Anne, Md.; College of Physicians and Surgeons, Baltimore, 1887; formerly a druggist; aged 65; died, October 1, of heart disease.

William Dawson Row ● Carlin, Nev.; College of Physicians and Surgeons, Baltimore, 1883; aged 62; died, September 19, of arteriosclerosis and diabetes mellitus, at the Southern Pacific General Hospital, San Francisco.

Edgar P. Cook ● Mendota, Ill.; Northwestern University Medical School, Chicago, 1895; aged 53; died, October 15, of pneumonia and septicemia, at the People's Hospital, Peru.

Gilbert Hess, Ashland, Ohio; Medical Department of the University of Wooster, Cleveland, 1884; aged 63; died, September 22, of acute parenchymatous nephritis.

Anna Harris Barnes, San Francisco; Hahnemann Medical College of San Francisco, 1887; aged 73; died, September 28, of arteriosclerosis and chronic nephritis.

Thomas E. Arrington, Howard, Ga.; University of Georgia Medical Department, Augusta, 1883; aged 64; died, September 23, of cerebral hemorrhage.

Colin M. Lindley, Washington, Pa.; College of Physicians and Surgeons, Baltimore, 1886; Civil War veteran; aged 77; died, September 30, of senility.

Ross S. Cannon, Wynona, Okla.; Missouri Medical College, St. Louis, 1898; aged 46; died, September 20, following an operation on the gallbladder.

Harry William Cease, Johnson City, Tenn.; Vanderbilt University Medical Department, Nashville, 1894; aged 50; died suddenly, September 29.

Isaac Fox DeLony, Leighton, Ala.; Medical Department University of Louisiana, New Orleans, 1853; aged 95; died, September 25, of senility.

E. H. Baker, Jr., Clarksdale, Miss.; Memphis (Tenn.) Medical College, 1900; aged 52; died, September 28, at a hospital in Greenville.

Kate Dellcourt Barstow, Washington, D. C.; Howard University School of Medicine, Washington, 1884; aged 87; died, October 1, of senility.

Colin M. Hyde, Laurel, Miss. (licensed, Mississippi, 1886); city health officer; aged 59; died suddenly, October 3, following a long illness.

Ventura P. Fuentes, New York; Medical Department of Columbia College, New York, 1892; aged 55; died, September 23, of meningitis.

Robert Thomas Allan, Los Angeles; University of Edinburgh, Scotland, 1886; aged 63; died suddenly, September 30, of heart disease.

John J. Koller, Cleveland; University of Vienna, Austria, 1890; formerly on the staff of St. Alexis' Hospital; aged 59; died, October 6.

Samuel H. Metzger, Lancaster, Pa.; Homeopathic Medical College of Pennsylvania, 1861; aged 87; was found dead in bed, October 6.

Edwin Rossiter Mulford, La Crosse, Wis.; Rush Medical College, Chicago, 1895; aged 58; died, October 12, of pernicious anemia.

Willis A. Mellon, Rockton, Ill.; Hahnemann Medical College and Hospital, Chicago, 1873; aged 76; died, September 30, of senility.

Lafayette Woodruff, Asotin, Wash.; Detroit (Mich.) Medical College, 1883; aged 64; died suddenly, September 23, of heart disease.

Henry W. Curtin, St. Louis; St. Louis College of Physicians and Surgeons, 1895; aged 56; died, September 28, of heart disease.

John Perry Vrooman, Napanee, Ont., Canada; Victoria University Medical Department, Toronto, 1887; aged 64; died, August 20.

John Francis Manger, Baltimore; Baltimore University School of Medicine, 1897; aged 68; died, September 26, Los Angeles.

Clayton W. Locke ● Lindsay, Calif.; Louisville (Ky.) Medical College, 1888; aged 61; died, September 26, of heart disease.

Conrad E. Nystrum ● Medford, Wis.; Hahnemann Medical College and Hospital, Chicago, 1892; aged 54; died, October 6.

Charles S. Love, Greenville, Tenn. (licensed, Tennessee, 1889); aged 65; died, September 29, of cerebral hemorrhage.

John Henry Mitchell, Dallas, Texas; Eclectic Medical Institute, Cincinnati, 1861; aged 89; died, September 30, of senility.

Adolphus P. Keever ● Lindsay, Okla.; Jefferson Medical College of Philadelphia, 1882; aged 69; died, September 29.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

VAN ESS

Another Bid for Bald-Headed Optimists

The Van Ess Laboratories, Inc., of Chicago, put out "Van Ess Special Dandruff Massage" and "Van Ess Liquid Scalp Massage." The concern seems to have behind it the following personnel:

Robert H. Van Sant	President, Manager and Director
Lewis E. Bulkeley	Vice-President and Director
W. Blair Baggaley	Secretary and Director
H. Blackett	Treasurer and Director
Felix Lowy	Director

Van Sant, the first part of whose surname (Van S.) doubtless has been modified to name the products, seems, until within the last year or two, to have been connected with a San Francisco concern known as the Overseas Trading Company of California. The story goes that this concern went out of existence under somewhat sensational circumstances and with little satisfaction to the creditors. Lewis E. Bulkeley, the vice-president, is said to be a "broker" in food products. W. Blair Baggaley is, apparently, a druggist, although he does not seem to be in that line of business at present. H. Blackett, the treasurer, appears to be in the advertising business, while Felix Lowy, the only one of the group who does not live in Chicago, is alleged to be connected with the Palm Olive soap concern of Milwaukee, Wis.

As is usual in the exploitation of all "hair growers," hair dyes, complexion beautifiers, bust developers and similar lines of cosmetic humbug, poor "Science" (with a capital "S") is dragged into the advertising. Some of the Van Ess advertisements illustrate the nostrum exploiter's pictorial conception of the scientist: A studious looking gentleman with horn-rimmed spectacles and laboratory gown, holding the inevitable measuring glass, while on the bench before him are beakers, bottles and a pestle and mortar. For some reason the Van Ess artist failed to get a glass retort in his depiction of Science Discovering Van Ess. The man is untrue to his craft.

HAIR TONIC HISTOLOGY

In the Van Ess advertising men are told that "Four Men in Seven are Bald at Forty." Now that Van Ess has been discovered, "Only Five Men in One Hundred Need Ever be Bald." The Van Ess advertisements show the typical, greatly magnified view, as conceived by the Amalgamated Hair Growers Union, of a cross-section of a hair with the dermis and epidermis. The tubule, through which the hair grows, looks, in the Van Ess advertisement, like a post hole with a somewhat bulbous base. Growing from the base is what appears at first sight to be a young spring onion but which, according to the advertisement, is a poor stunted hair that cannot grow because the top of the post hole is filled with small rocks labeled "caked sebum."

The physical make-up of the package in which a cosmetic nostrum is dispensed has large psychological possibilities. Van Ess comes in a wide-mouthed bottle of characteristic shape. Part of the paraphernalia is a rubber stopper that has several nipples on the outer surface. Three of the nipples are hollow. After opening the bottle this nipple-surfaced rubber cap is screwed onto the neck and the optimist who expects to grow hair rubs these nipples over the scalp. An interesting and highly imaginative picture in the little booklet that comes with the nostrum shows just how each rubber nipple fits into its own particular hair follicle, removes the caked sebum and causes the poor stunted hair to flourish like the green bay tree. Possibly a hundred years from now exploiters of "hair growers" (they will, doubtless, still be doing business) will know enough about elementary dermatologic histology to get away from the idea that the hair grows

out of the skin like a stalk of wheat or an onion growing out of the soil.

Some of the claims made for Van Ess are:

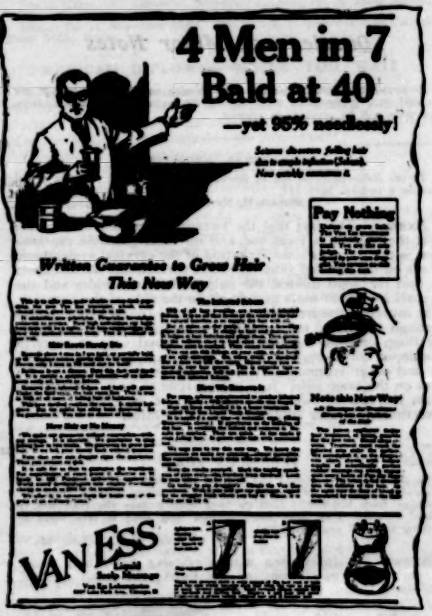
"We Guarantee To Make Hair Grow. To Make It Silky, Lustrous, Beautiful."

"Remove that infected oil—Sebum—and soon you hair has the silken loveliness, the sheen and beauty for which every woman strives. Our method accomplishes that result."

"We guarantee to stop falling hair in two weeks. We guarantee to grow new hair. If we fail, your money back without question."

"Experiments of years prove it effective on 91 heads in 100. Foremost authorities approve it. World noted dermatologists now employ it —many charge as much as $500 for the treatment."

The "money back guarantee" sounds plausible and should be counted on to sell many "treatments." The bald-headed contingent will use the stuff, decide after spending varying amounts of money on it that they have been humbugged once more, charge it up to profit and loss and forget it—until the next sure-fire hair-grower comes to their attention. If, as someone who should know, has said, a sucker is born every minute, there is a bald-headed sucker born every ten minutes. This perennial group makes a sufficiently wide and lush field for the exploiters of cures for baldness. So long as hope springs eternal in the breast of the bald-headed and such cures are advertised the latter will sell and the former be "sold."



Greatly reduced reproduction of a typical Van Ess Advertisement. The original measured 9 inches by 13 inches. Such advertising in metropolitan papers is expensive, but the profits on Van Ess can doubtless stand it.

As THE JOURNAL has received many inquiries, a specimen of the Van Ess Special Dandruff Massage was purchased and turned over to the A. M. A. Chemical Laboratory. Here is what the laboratory reports:

LABORATORY REPORT

"'Van Ess Special Dandruff Massage' is sold in an amber colored bottle containing about 4 fluidounces. The label declares the presence of 20 per cent. of alcohol. The preparation is a perfumed liquid which separates into two layers on standing. The upper layer, which amounts to a little more than one-third (about 36 per cent.) of the whole, is pale yellow and consists essentially of a petroleum oil which appears to be kerosene. The lower layer, which is a darker yellow, appears to be composed of water and alcohol containing small amounts of quinin sulphate, coloring matter and perfume. Although 20 per cent. of alcohol is declared on the label, analysis disclosed only about 14 per cent. The results of the examination indicate that the composition of the preparation is essentially as follows:

Kerosene	36 per cent.
Alcohol	14 per cent.
Quinin sulphate	0.06 gm. per 100 c.c.
Water, perfume and dye to make	100 c.c.

"It seems probable that a mixture of 35 parts of kerosene and 15 parts of alcohol, denatured by the addition of 2 grains of quinin sulphate per fluidounce and 50 parts of water would have whatever therapeutic properties the Van Ess Special Dandruff Massage possesses."

If, as seems probable, Van Ess Special Dandruff Massage is made with denatured alcohol, the actual cost of the ingredients should not exceed twenty cents a gallon. The market price of the preparation is $1.50 for four ounces. Even after the Van Ess concern has paid its advertising bills, and they must be heavy, there should still be a handsome profit at selling twenty cents' worth of kerosene and alcohol for forty-eight dollars. Until the accumulated experience of the bald-headed public overcomes the persuasive psychology of the advertising, Mr. Van Sant's latest venture should prove more profitable than the Overseas Trading Company of California.

Correspondence

TRANSFUSION AND SPLENECTOMY IN PURPURA HEMORRHAGICA

To the Editor:—In a recent article on splenectomy in chronic hemorrhagic (thrombocytopenic) purpura, Brill and Rosenthal state that experience has led them to believe "that transfusion is not only useless as a curative measure, but seems to increase the bleeding" (*Am. J. M. Sc.* 166:503, 1923). Unfortunately, they do not report their two cases in detail. Our experience in the blood service at the Boston City Hospital has been more with the acute than the chronic type, but it has led to quite the contrary opinion.

In these acute cases we have found the value of transfusion very great. In order, however, that its benefits may be realized, certain facts in regard to platelets and the limitations of the influence of transfusion on them must be heeded. It is true that a *single* transfusion will stop the bleeding only in a very mild case, and that the benefit even here is likely to be but temporary. A brief consideration will show why this is the case. Hemorrhages usually begin when the platelet count drops below 50,000 or 75,000; but most of our patients, when they came under observation, had counts much lower than this—often below 10,000. A single transfusion seldom increases the count by more than 20,000, often not by more than 10,000. Obviously, several transfusions must be done before the platelets are increased to the point at which bleeding will cease. Moreover, the life of a platelet in the blood stream does not exceed a week; hence the transfusions must be at short intervals—not over forty-eight hours.

In most cases we have found it possible thus to raise the red corpuscles and hemoglobin to somewhere near normal figures and to build up the platelet count to a point at which capillary hemorrhage is controlled. Occasionally another transfusion or two may be needed at longer intervals, but we have found that the acute cases usually go on to recovery, and further transfusion ceases to be needed (THE JOURNAL, March 24, 1923, p. 838). We have had two deaths, one from

appendicitis, weeks after complete cessation of bleeding, and one in which repeated transfusions were a frank failure.

As to splenectomy, our results agree with those of other observers, to the effect that there is a prompt increase in platelets after the operation. The brilliant results of Kaznelson and of Brill and Rosenthal seem to justify splenectomy in certain cases of this disease, though the surgeon must surely be plentifully supplied with sand to do a major operation on a patient spotted with petechiae and ecchymoses and bleeding from gums, nose and stomach, when every touch seems, like that of Moses' rod, to bring forth a gushing spring. Probably splenectomy will find its best application in chronic and recurring cases, and as a last resort in acute ones that cannot be controlled by transfusion. But when circumstances permit frequently repeated transfusions, due conservatism would seem to demand that they be tried first.

RALPH C. LARRABEE, M.D., Boston.

"THE STATUS OF BLOOD TRANSFUSION"

To the Editor:—In an editorial (THE JOURNAL, September 29, p. 114) you comment on the present status of blood transfusion. After reviewing some of the work showing the disadvantages of the citrate method of transfusion, you commend very heartily whole blood transfusion. This commendation appears to be in keeping with results of physiologic and clinical investigations, but it is difficult to understand your position with regard to direct transfusion, in which the blood is directly conveyed from the artery of the donor to the vein of the recipient. The obvious objections to blood vascular suturing in transfusion are the technical difficulties and the rather prolonged incisions necessary to expose the vessels. These objections do not obtain when a short jointed cannula, such as the Bernheim cannula, is used. In a communication in the *Archives of Surgery* (September, 1923, pp. 466-468) I have reported fifty-four consecutive cases, in which this method was used without a reaction. To the present date we have had four more cases, making a total of fifty-eight without reaction.

It is doubtless true that, from the moment blood leaves the vascular system, chemical changes occur. Clotting, which is supposed to take place in about three minutes, is not an instantaneous process, but progressive chemical changes toward clotting are probably inaugurated immediately after the blood leaves the vascular system. Many of these changes are so fine as to defy detection by chemical tests; but that they do occur, even in accurately matched bloods, seems to be the best explanation for the reactions after transferring whole blood by the indirect method without the use of anticoagulins. In many instances the blood and tissues of the recipient can absorb these changed products without a reaction; or the products may not be sufficient to produce a reaction. It would be interesting to know whether any one has ever noted a distinct reaction after the direct method of transfusion, when the bloods had been properly matched.

With the jointed Bernheim cannula, half of the cannula can be inserted in the radial artery of the donor under a local anesthetic in the operating room, and the other half in the vein of the patient in the patient's room. The donor is then brought to the patient's room, and the patient is no more disturbed than in the citrate transfusion. The incisions are very short.

The inability to measure the amount of blood is urged by some as an objection to the direct method. The object of transfusion is to obtain certain clinical results, and this is best regulated by frequent and careful observations of blood pressure and pulse rate, and of the general appearance of both the donor and the recipient. A therapeutic agent is used to obtain definite clinical results and not to give a certain measured amount. Standard dosages of drugs are merely for convenience, and usually vary within rather wide limits. If a small amount does not produce the desired effect, a larger dose is given. This is true of ether, digitalis, quinin and other drugs in active use.

Posttransfusional reactions are harmful. A severe reaction in the very ill patients that usually require transfusion may do fully as much harm as the transfused blood does good. Consequently, when a method can be employed that is followed by no reaction in properly matched bloods, and involves no more immediate tax on the patient than the technic of the citrate method does, it seems that if the object of transfusion is to benefit the patient, the direct method by a jointed cannula should at least receive very serious consideration.

J. SHELTON HORSLEY, M.D., Richmond, Va.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

UNILATERAL SWEATING

To the Editor:—What can be the cause of a unilateral sweating of the face in a woman, aged 35?

MORRIS H. NEWTON, M.D., Little Falls, N. Y.

ANSWER.—The fact that the sweating is unilateral suggests that the cause is a local one, and the most probable explanation is that there is some irritation of the cervical sympathetic fibers on the affected side. If this is correct, one would expect to find the pupil dilated, the palpebral fissure wider and the eyeball somewhat more prominent on the side of the sweating. The source of the irritation may be in the course of the nerves through the neck, for example by enlarged glands or other swelling, or from some lesion in the spinal cord or roots in the upper dorsal region. In the latter case one would expect to find other symptoms, such as pain or paresthesia, in the arm on the same side. It is not possible to make a diagnosis from the fact of sweating alone, but the suggestion for the direction of further study may prove of value.

PEDICULUS PUBIS

To the Editor:—I should like a little information on the subject of *Pediculus pubis:* 1. Is a person liable to become infested from the toilet or from bedding? 2. How long does it take the crab nits to hatch? After they have hatched, how long does it take them to develop into full grown insects?

W. G. JONES, M.D., Sedalia, Mo.

ANSWER.—1. Infestation with *Pediculus pubis* may occur through bedding, clothing or the toilet; the usual method, however, is close personal contact.

2. The female lays from ten to fifteen eggs, which hatch in seven days, and the resulting pediculi mature in about two weeks.

TREATMENT OF WHOOPING COUGH BY ROENTGEN RAY

To the Editor:—Kindly give details regarding technic and dosage or strength and length of exposure to roentgen ray in treatment of pertussis in children, as referred to in Queries and Minor Notes, THE JOURNAL, September 8.

C. J. REILLY, M.D., Beatrice, Neb.

ANSWER.—The exposure used in the treatment of pertussis patients by one pediatrician is: 4 milliamperes; 7 inch spark gap; 14 inches distance; 2 mm. filterer; four minutes' duration.

BRUNS' GLUCOSE SOLUTION

To the Editor:—Please give the method of preparing Bruns' glucose solution for clearing sections of tissue made by the freezing method.

H. M. E.

ANSWER.—Bruns' glucose solution consists of distilled water, 140 c.c.; glucose, 40 gm.; glycerin, 10 gm. About 5 c.c. of 40 per cent. solution of formaldehyd should be added to prevent decomposition and fix the tissues.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, November 13-14. Sec., Dr. J. W. Walker, Fayetteville.

CONNECTICUT: Hartford, November 13-14. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, November 13-14. Sec. Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport.

CONNECTICUT: New Haven, November 13. Sec., Homeo. Bd., Dr. E. C. M. Hall, 83 Grand Ave., New Haven.

MAINE: Portland, November 13-14. Sec., Dr. Adam P. Leighton, Jr., 192 State Street, Portland.

NEBRASKA: Lincoln, November 6-8. Supt., J. D. Cass, Lincoln.

NEVADA: Carson City, November 5. Sec., Dr. Simeon L. Lee, Carson City.

NORTH CAROLINA: Chapel Hill, December 4. Sec., Dr. Kemp P. B. Bonner, Raleigh.

SOUTH CAROLINA: Columbia, November 2. Sec., Dr. A. Earle Bonner, 1806 Hampton St., Columbia.

TEXAS: Dallas, November 20-22. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg., Dallas.

MEDICAL DIPLOMAS WHILE YOU WAIT

In December, 1922, as is revealed by an investigation conducted through the Council on Medical Education and Hospitals of the American Medical Association, one Edward J. Meelbusch of Chicago applied to the government for vocational training in medicine. His application was refused because he did not have the essential premedical college training. He then asked for a course in chiropractic, but was again refused because he could not show evidence of having obtained even a high school education. Then he requested and was granted a four months' course in physiotherapy, at which he was engaged until the end of April, 1923.

Further investigation reveals that he became possessed shortly thereafter of three documents: a high school certificate indicating that he had passed a state examination, supposedly the equivalent of a four year high school education; a degree in osteopathy from the American College, and a diploma from the St. Louis College of Physicians and Surgeons. The two diplomas are reproduced herewith. Meelbusch stated, at that time, that he was going to take an examination for a license in Illinois under the "other practitioners act"; that he had sent in an application and a photograph, but that he had not received a reply. He stated frankly that another person was to take the examination for him for which he was to receive a fee of $150. Meelbusch is reported to have said also that he paid $250 for the osteopathic diploma and $750 for the degree in medicine. According to the results of an investigation into his occupational record, and by the definite information that he had taken no medical training up to the end of December, 1922, it is apparent that Edward J. Meelbusch had spent neither the four years required to secure a degree from a reputable medical college, nor had he spent one—the senior—year in residence at the St. Louis College of Physicians and Surgeons—the shortest time after which, under any circumstances, a degree could be granted to him by any medical school.

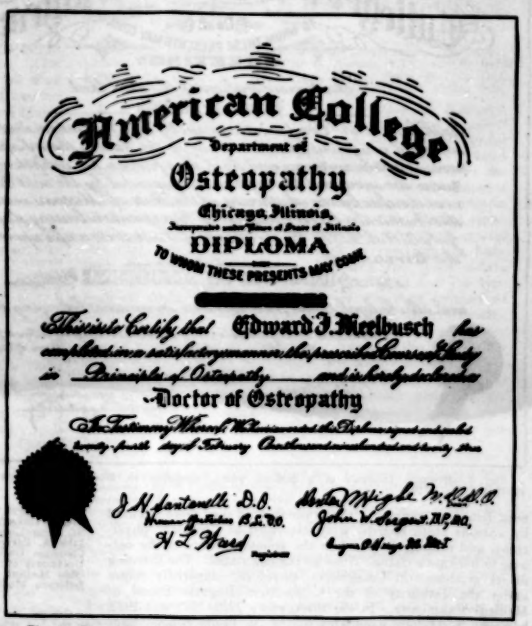

American College
Department of
Osteopathy
Chicago, Illinois
DIPLOMA
TO WHOM THESE PRESENTS MAY COME,
[redacted]
Edward J. Meelbusch
Doctor of Osteopathy

Fig. 1.—The diploma of which this is a reduced facsimile is said to have been purchased by Meelbusch for $250.

According to a statement by Meelbusch, he was born March 28, 1894, and had completed the eighth grade in a public school at Oak Park, Ill., at the age of 12. He gave also his occupational history from that age until he entered the Navy in December, 1917. His occupational history has also been definitely outlined since he left the Navy in January, 1919.

DR. BRIGGS REMAINS SILENT

Oct. 2, 1923, a letter was sent to Dr. Waldo Briggs, dean of the St. Louis College of Physicians and Surgeons, stating that Edward J. Meelbusch held a diploma from that institution and asking when he had been in attendance. Up to the present date (Oct. 23, 1923) no reply has been received from Dr. Briggs, and no explanation has been forthcoming relative to the peculiar circumstances under which the diploma appears to have issued. A list of the students enrolled in the senior class of this college during 1922-1923 does not include the name of Edward J. Meelbusch.

THE AMERICAN COLLEGE

The college from which Meelbusch obtained the osteopathic diploma is an institution chartered in Illinois as the Metropolitan College, March 8, 1916, but which changed its name in 1919 to the American College. In a letter sent out by Denton B. Higbee, the "dean" of this institution, the reader is informed that "it conducts residence and correspondence courses in all methods of drugless healing, that is, chiropractic, osteopathy, naprapathy, etc." It is one of the large variety of miscellaneous degree conferring correspondence mills which, at the present time, are being chartered without hindrance in so many states of this country.

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS

This college was organized in 1869, was discontinued in 1873, but was reestablished in 1879. In 1907, it was rated in Class B by the Council on Medical Education, but in 1912 the rating was reduced to Class C—the lowest rating. In 1915, it merged with the Barnes Medical College and the American Medical College of St. Louis to form the Medical Department of the National University of Arts and Sciences. The control of its records and property, however, was retained by Dr. Waldo Briggs, the dean, and his associates. In 1916, the present institution, the St. Louis College of Physicians and Surgeons, withdrew from the merged institution and was reestablished.

NONRECOGNITION BY STATE LICENSING BOARDS

In 1918, official reports from the licensing boards of thirty-eight states, including its home state, Missouri, indicated that recognition had been withdrawn from the St. Louis College of Physicians and Surgeons. At present, its graduates are admitted to the examinations of only three states and the District of Columbia. Massachusetts, Wyoming and the District of Columbia recognize this school because their inadequate laws do not give them authority to refuse recognition. In Connecticut, the Regular Board of Medical Examiners has refused to recognize graduates of this college, but during the last few years they have found easy entrance to examinations given by the Eclectic Board.

THE ST. LOUIS COLLEGE A "REGULAR" SCHOOL

Since its organization in 1869, the St. Louis College of Physicians and Surgeons has always claimed to be and has been listed as "regular"; the graduates, as they were licensed by various state boards, were classified as "regular" physicians, and nothing is found in the announcements of the college to indicate a change from its regular status. The licensing of its graduates in Connecticut, therefore, supposedly comes under the authority of the Connecticut Regular Board of Medical Examiners. In the three years 1920, 1921 and 1922, however, forty-four graduates of the St. Louis college have been licensed by the Connecticut Board of Eclectic Medical Examiners.[1] During the same three years this board, according to official statistics, licensed altogether 140 applicants,[2] who were graduates of either Class C medical colleges, or of low-type irregular institutions, or those for whom the evidence obtained fails to show that they ever studied in or graduated from any medical school.

The diploma now held by Meelbusch, therefore, is not the only one granted under peculiar circumstances.

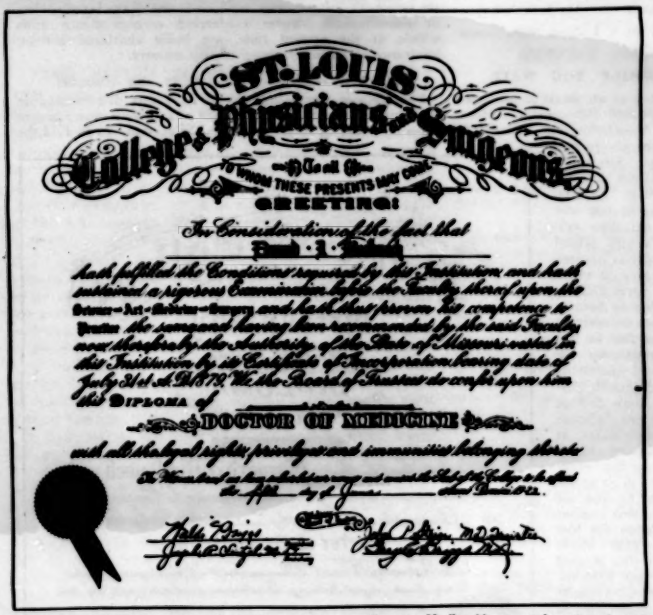


Fig. 2.—Reduced facsimile of a diploma which, according to Meelbusch's reported statement, was purchased for $750.

1. J. A. M. A., State Board Number, 78: 1308 (April 29) 1922.
2. J. A. M. A., State Board Number, 80: 1233, 1242 (April 28) 1923.

Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary, of the Michigan Board of Registration in Medicine, reports that 32 candidates were licensed by reciprocity from March 12 to Aug. 15, 1923:

College	Licensed by Reciprocity	Year Grad.	Reciprocity with
Chicago Coll. of Med. and Surg.	(1913)	Illinois, (1916)	Wyoming
Illinois Medical College		(1906)	Illinois
Loyola University School of Medicine		(1922)	Illinois
Northwestern University Medical School	(1909),	(1921)	Illinois
Rush Medical College		(1897)	Illinois
University of Illinois		(1917)	Illinois
State University of Iowa College of Medicine		(1922)	Iowa
University of Kansas School of Medicine		(1918)	Kansas
University of Louisville Med. Dept.	(1909)	Missouri, (1922)	Kentucky
University of Maryland		(1922)	Maryland
Harvard University		(1900)	Mass.
University of Minnesota Medical Dept.		(1920), (1923)	Minnesota
Kansas City Medical College		(1903)	Kansas
St. Louis University School of Medicine		(1922, 2)	Ohio, Missouri
Washington University Med. College		(1918), (1921)	Missouri
Bellevue Hospital Medical School		(1898)	New York
Syracuse Univ. College of Med.	(1921),	(1922)	New York
Cleveland Homeo. Med. Col.		(1909)	Ohio
Medical College of Ohio		(1890)	Indiana
Western Reserve Univ. School of Medicine		(1919)	Ohio
Jefferson Medical College of Philadelphia		(1921)	Indiana
Vanderbilt Univ. School of Med.	(1916),	(1917)	Tennessee
University of Vermont College of Medicine		(1904)	New York
National University of Athens, Greece		(1904)	Illinois

South Dakota July Examination

Dr. H. R. Kenaston, director, Division of Medical Licensure, South Dakota Board of Health and Medical Examiners, reports the oral, written and practical examination held at Deadwood, July 17-18, 1923. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Thirteen candidates were examined, all of whom passed. Four candidates were licensed by reciprocity. The following colleges were represented:

College	Passed Year Grad.	Per Cent.
University of Arkansas Medical Dept.	(1923)	75.8
Bennet College of Eclectic Med. and Surgery	(1901)	82.7
College of Physicians and Surgeons, Chicago	(1901)	82.4
Harvey Medical College	(1898)	83
Rush Medical College	(1899)	83.4, (1923) 80.1
Tulane University School of Medicine		(1922) 76.8
St. Louis University School of Medicine		(1920) 82.3
John A. Creighton Medical College		(1920) 84.2
Columbia University College of Phys. and Surg.		(1914) 84.2
University of the City of New York		(1879) 84
Ohio Medical University, Columbus		(1898) 82.7
Jefferson Medical College of Philadelphia		(1922) 87.1

College	Licensed by Reciprocity	Year Grad.	Reciprocity with
College of Medical Evangelists		(1922)	California
University of Minnesota		(1921), (1922)	Minnesota
Baylor University College of Medicine		(1921)	Texas

Tuberculous Infection and Manifest Tuberculosis.—All who are familiar with the subject know that the concepts "tuberculous infection" and "manifest tuberculosis" convey two very different meanings. The tubercle bacillus produces illness, but it also enters the tissues and rests there, living, silent and without noticeable effects. Infection engrafts itself on millions; manifest tuberculosis claims only its tens of thousands.—A. K. Krause: Rest and Other Things, p. 37.

Book Notices

AN INTRODUCTION TO APPLIED PSYCHOLOGY FOR NURSES. By Donald A. Laird, Assistant Professor of Psychology, University of Wyoming. Cloth. Price, $2.50. Pp. 236, with 48 illustrations. Philadelphia: J. B. Lippincott Company, 1923.

The ability of the nurse to understand her patient is often a matter of fundamental importance in the treatment of the patient. Much is therefore to be gained by including instruction in psychology in the curriculum of the nursing schools. But it is extremely important that the material for instruction be carefully selected and expressed in the simplest terms. In this little volume, the author not only has attempted to give some conception of the evolution of behavior, to discuss reflexes, instincts, emotions, temperaments, thoughts, the complex phenomena of repression, substitution and dreams, the use of suggestion, and the nature and causes of mental ill health and feeblemindedness, but also has entered in considerable detail into nervous anatomy and endocrinology. Much of this material is quite unnecessary for the purpose in view, and one inevitable result of the diffuseness is that all topics are sketchily handled and to the tyro must often be utterly confusing. The language is far from simple, and much of it would be Greek to the average student nurse. The diagrams and cuts are very technical for the most part, and have little bearing on the relation of the nurse to the problems of applied psychology. There are some serious errors such, for instance, as the statement that the human sphincter pupillae muscle reacts directly to the stimulus of light. One wonders how a boy "coaxes a growth of beard" and on what facts it is established, as well as what significance it has for applied psychology, that "the masculine type of woman is one with hyperactive adrenal." While behavioristic psychology does not lend itself readily to description in simple terms, often because words have taken the place of understanding, yet much more could be accomplished by attempting less than has been done in this volume.

PRACTICAL PHYSIOLOGY. By E. P. Catheart, M.D., D.Sc., F.R.S., Gardiner Professor of Chemical Physiology, University of Glasgow, D. Noël Paton, M.D., LL.D., F.R.S., Regius Professor of Physiology, University of Glasgow and M. S. Pembrey, M.A., M.D., F.R.S., Professor of Physiology, Guy's Hospital, University of London. Cloth. Price, $6. net. Pp. 344, with 206 illustrations. New York: Longmans, Green & Co., 1923.

The medical student in this country is accustomed to view a textbook of physiology with misgiving. It is frequently a large, heavy volume, and its knowledge is extracted in most difficult ordeals. This English physiology is not a large book. Discussions, history, reviews and bibliographies, which are usually present in complete editions of textbooks on this subject, are omitted. It is, however, much more than a manual, although largely devoted to experimentation. It is an introduction to the study of vital phenomena. Part I comprises an elementary and an advanced course in experimental physiology; Part II, an elementary and an advanced course in chemical physiology.

KYSTOSKOPISCHE TECHNIK. Ein Lehrbuch der Kystoskopie, des Ureteren-Katheterismus, der Funktionellen Nieren-Diagnostik, Pyelographie, Intravenösen Operationen. Von Dr. Eugen Joseph, A. O. Professor an der Universität Berlin. Price, $3.60. Pp. 221, with 262 illustrations. Berlin: Julius Springer, 1923.

The optical principles on which cystoscopy is based are more briefly and clearly described in this book than in many similar volumes. That a thorough examination of the entire body should precede the cystoscopy is illustrated by the citation of instances in which attention was called to spinal cord lesions by the cystoscopic findings. The author warns against the use of pneumoroentgenography of the urinary tract. A 25 per cent. solution of lithium iodid is preferable, in his opinion, to any other for pyelography. The absence of ill effects of the latter procedure is strongly emphasized. It is of interest to note that the faint shadow found in certain renal calculus cases is due to the absence of a colloid framework so that the calculus remains very soft. This is not only true of urates but also may be true of oxalates and phosphates. Such a soft calculus may be easily overlooked, and be the cause of a persistent pyelitis. One is surprised to find so little reference to sacral anesthesia in cases in which the bladder is so irritable as to make cystoscopy difficult or impossible by the ordinary method. The absence of a description of an American made cystoscope is not to be wondered at; but such difficulties as mentioned in Chapter IV, "that one is often not able to clear up a pyuria or a hematuria at the first sitting," would justify the introduction of the principles of constant irrigation which our cystoscopes possess. Apparently much reliance is placed on the guinea-pig test in renal tuberculosis; two colored illustrations of the postmortem changes following inoculation in these animals are most instructive. The chapter on anomalies is less satisfactory, but this is an exception. The one on pyelography is complete, and the same is true of that on functional tests. The author is a strong advocate of his own indigocarmin test, and places great reliance on it in preference to ureteral catheterization in some cases, such as renal tuberculosis, in which he warns against catheterizing the noninvolved side. The functional tests that are applicable to surgical cases are few, according to the author, and are of value only when there is extensive renal destruction or marked toxicity, being of little use in intermediate cases. In the chapter on the use of the high frequency current it is of interest to note that one can judge a bladder papilloma to be benign or malignant only by its cystoscopic appearance and its clinical behavior; that is, its tendency to recurrence.

CHEMISTRY INORGANIC AND ORGANIC WITH EXPERIMENTS. By Charles Loudon Bloxam. Revised by Arthur G. Bloxam, F.I.C. and S. Judd Lewis, D.Sc., F.I.C. Eleventh edition. Cloth. Price, $9. Pp. 832, with 310 illustrations. Philadelphia: P. Blakiston's Son & Co., 1923.

It is fifty-six years since the first edition of Bloxam's Chemistry was published. The last previous edition appeared ten years ago. The book is a hand reference work for teachers, students and others who desire a broad but brief exposition of chemistry. Those who are familiar with the more recent editions will appreciate the added material required by the progress of the science in the last decade. The new matter includes a short account of the present views on the structure of the atom, the quantum theory and crystal structure, while some subjects, such as spectroscopy, have been rewritten and expanded. To keep the space within reasonable limits, the text has been condensed and the type reduced slightly in size. Because of the vast amount of information given, each subject is necessarily treated briefly. The chapter on radium and other radioactive substances should prove useful to physicians. Some of the newer synthetic drugs, such as acriflavine, are also mentioned. The physician who wants a treatise on general chemistry which is thoroughly up to date, which touches every phase of the subject and which will seldom fail when appealed to, will find this the most satisfactory of any single volume that can be found.

THE URETHRA AND THE URETHROSCOPE. A Manual of Practical Urethroscopy. By F. Carminow Doble, M.R.C.S., L.R.C.P., Officer in Charge Gonorrheal Division, Military Hospital, Rochester Row. With a foreword by Major A. T. Frost, O.B.E., R.A.M.C., Officer Commanding Military Hospital, Rochester Row. Cloth. Price, $3.40. Pp. 120, with illustrations. New York: Oxford University Press, 1923.

This excellent work has much to recommend it, especially to students and to beginners in venereal work. Too much space is probably given to the air-dilating instruments of English, French and German manufacture, and too little to the water-dilating types, so much in use in America. The arrangement of the subject matter into three chief divisions dealing with the anterior, the posterior and the female urethra is good. The anatomy of each part is accurately and concisely given. Then the instruments best adapted to each part are described. Finally, the pathology and treatment are covered in detail, particularly the use of various operative measures. Each subject is treated concisely, accurately and with a broad knowledge and wide experience. Too broad a field is covered perhaps, which necessarily makes the handling of many subjects somewhat too brief. Nevertheless, this little book should receive all the consideration it deserves.

Medicolegal

Classification of Loss from Amputation Below Knee

(Cone et al. v. Texas Employers' Ins. Ass'n (Texas), 251 S. W. R. 262)

The Court of Civil Appeals of Texas says that an employee sustained injuries that resulted in the amputation of one of his legs 6 inches below the knee joint, enough of the leg below the knee remaining to make it useful in wearing an artificial limb, as was found by the trial court, which held, as a matter of law, that the man's injuries did not come within the specific compensation provided by the workmen's compensation law of Texas for the loss of a leg at or above the knee, but fell within the provision for compensation for the loss of a foot. On this appeal from that decision it was argued that "at," as used in the provision for compensation for the loss of a leg "at or above the knee," should be construed as meaning "near to, approach, nearness, proximity"; that its primary meaning might be conceded to be "nearness." But the exact definition of a word must often be determined from its context. Many definitions and shades of meaning have been given to the word "at"; but, as used in the provision here referred to, it has only one meaning, as applied to the facts of this case, and that is that the loss of the leg must be "at" the knee, in the exact sense of the location of the knee, and not below the knee to any extent whatever. This is made plain by the description of the loss being "at or above the knee." The use of the word "above" in connection with "at" limits the meaning of that word to the exact location of the knee in relation to that part of the leg below the knee, and it cannot be construed as including any portion of the leg below the knee. The court of civil appeals concurs with the trial court in holding that the loss of the leg below the knee, when the stump is preserved which can be used by the injured party, does not entitle him to compensation under that section of the statute which provides for "the loss of a leg at or above the knee."

Refusal to Undergo Treatment by Immobilization

(Moran v. Oklahoma Engineering and Machine and Boiler Co. et al. (Okla.), 214 Pac. R. 913)

The Supreme Court of Oklahoma says that some time after the plaintiff had been severely injured while in the employ of the defendant company, the state industrial commission made an order requiring him to submit to a physical examination by two physicians for the purpose of determining whether or not his disability had ceased. The physicians discovered that he was still suffering from an ununited fracture of the sixth rib, and expressed the opinion that the injury was not necessarily permanent; that the patient's recovery depended on either securing union of the ununited fracture, or resection of the rib so as to break contact with the broken ends; that the simple operation of immobilization would probably effect a cure within three months, and, if it was not successful, then the more serious open operation should be performed. Thereupon the commission ordered the plaintiff to enter a hospital for treatment by immobilization for the period of three months at the expense of the insurance carrier, which agreed to furnish such medical treatment as was necessary, while the plaintiff agreed to accept the treatment of a named physician. However, after the plaintiff had been taken to the hospital and provision made for his care, he returned to his home and notified the commission that it was impossible for him to submit to the treatment of the physician. The commission then ordered that the compensation which the plaintiff was being allowed should be discontinued from the date he was ordered and taken to the hospital, which order of discontinuance of compensation is here reversed and directed to be set aside.

There is no specific provision of the workmen's compensation law of Oklahoma authorizing the industrial commission to discontinue compensation, during the continuance of disability, on any ground short of the employer to pay compensation during the continuance of the disability is, however, subject to the implied condition that the workman shall avail himself of such reasonable remedial measures as are within his power. Where the workman unreasonably refuses to undergo a minor operation, simple, safe and reasonably certain to effect a cure, the continuing disability results not from the injury but from his own wilful act. Whether or not the refusal to submit to an operation and treatment was unreasonable was a fact which the employer must have established and the commission must have found in order to have stopped the injured employee's allowance, and they must have found, further, that the treatment would have relieved the trouble and thus benefited the employer.

If it be conceded that the operation of immobilization involved little danger or suffering, still this court is unable to find any provision in the compensation law conferring authority on the industrial commission to discontinue compensation solely on the ground that the claimant refused to submit to an operation; and neither the evidence taken nor the findings of fact of the commission warranted the assumption that the continuing disability of the plaintiff was the result, not of his injury, but of his unreasonable refusal to submit to a simple operation. Obviously, the simple operation of immobilization recommended by the physicians was merely an experiment. There was no such assurance that this operation would work a cure as would justify the industrial commission in discontinuing the compensation from the date the order was made requiring the claimant to go to the hospital. At least, a reasonable time for recovery should have been allowed before compensation was discontinued. The physician who was to give the treatment expressed the opinion that, if the operation by immobilization was successful at all, it would take at least three months from the date of the examination to work a cure. Surely the compensation should not have been cut off until after this reasonable time for recovery had expired.

Weight of Physician's Testimony from Experience

(American Ry. Express Co. v. Lancaster (Ky.), 251 S. W. R. 670)

The Court of Appeals of Kentucky, in affirming a judgment in favor of plaintiff Lancaster for injuries says that his principal injury was to his knee. The attending physician found the knee swollen and very painful to the touch. In his opinion, one or more of the ligaments had been strained or turned. Speaking from experience, he testified that the knee joint, when once hurt, remains more or less weak. In doing straining work, it becomes painful and loses part of its mobility. According to his best judgment, the injury to the plaintiff's knee would be likely to last him through life. On the other hand, the physicians who testified for the defendant express company said that the plaintiff's knee had been completely cured. It was insisted that because the attending physician used the words, "I am speaking just from my experience," his evidence was of no greater value than that of a layman. It was evident, however, that the witness spoke from his experience as a physician. Clearly, such experience would add weight to, rather than detract from, the value of his testimony.

Society Proceedings

COMING MEETINGS

Porto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Augustin R. Laugier, Box 1117, San Juan, Secretary.

Radiological Society of North America, Rochester, Minn., Dec. 3-7. Dr. M. J. Sandborn, Appleton, Wis., Secretary.

Southern Medical Association, Washington, D. C., Nov. 12-15. Mr. C. P. Lorans, Empire Building, Birmingham, Ala., Secretary.

Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 11-13. Dr. H. A. Royster, 423 Fayetteville Street, Raleigh, N. C.

Tri-State District Medical Society, Des Moines, Iowa, Oct. 29-Nov. 1. Dr. William B. Peck, 82 Stephenson Street, Freeport, Ill., Managing Director.

Western Surgical Association, Colorado Springs, Colo., Dec. 6-8. Dr. Warren A. Dennis, Hamm Bldg., St. Paul, Minn., Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Syphilis, St. Louis

7: 417-616 (July) 1923

Practical Observations on Syphilis. VI. H. H. Hazen, Washington, D. C.—p. 417.
*Quantitative Studies in Syphilis from Clinical and Biological Point of View. V. Arsenic Content of Blood and Spinal Fluid After Neo-Arsphenamin in Swift-Ellis Method of Treatment. J. A. Fordyce, I. Rosen and C. N. Myers, New York.—p. 444.
Id. VI. Arsenic Content of Spinal Fluid After Arsphenamin in Swift-Ellis Method of Treatment. J. A. Fordyce, I. Rosen and C. N. Myers, New York.—p. 478.
Id. VII. Arsenic Content of Spinal Fluid After Arsphenamin and Drainage. J. A. Fordyce, I. Rosen and C. N. Myers, New York.—p. 513.
*Id. VIII. Arsenic Content of Blood After Intravenous Injection of Silver Arsphenamin. J. A. Fordyce, I. Rosen and C. N. Myers, New York.—p. 528.
*Chancre in Axilla. D. W. Montgomery and G. D. Culver, San Francisco.—p. 560.
Chancre of Lip. M. B. Parounagian and H. Goodman, New York.—p. 563.
*Syphilis as We See It Among the Natives of Bechuanaland Today. Study of 1,547 Cases. D. C. McArthur, London.—p. 569.
Use of Sodium Thiosulphate in Treatment of Postarsphenamin Dermatitis Exfoliativa: Report of Case. I. C. Sutton, Anaheim, Calif.—p. 608.
Comparative Value of Kolmer's New Antigen in Routine Wassermann Test. K. M. Lynch, Dallas, Texas.—p. 612.

Arsenic Content of Blood and Spinal Fluid After Neo-Arsphenamin Injection.—The serum, clot and cerebrospinal fluid of twenty-seven patients treated with neo-arsphenamin intravenously and autoserum intraspinally were analyzed by Fordyce, Rosen and Myers for arsenic content. It was found that 26 per cent. of the patients and 12.5 per cent. of the cerebrospinal fluids showed no arsenic at the time of at least one examination. Each patient showing these negative findings at some other time yielded fluid containing arsenic. Twenty-two per cent. of the patients, or 10.5 per cent. of the cerebrospinal fluids, showed a trace of arsenic at some time during the treatment. These analyses indicate that arsenic passes with comparative ease into the spinal fluid in probably every patient at some period during the course of treatment.

Arsenic Content of Spinal Fluid After Arsphenamin.—Of 257 cerebrospinal fluids analyzed by Fordyce et al., 12 per cent. showed no arsenic at some period during treatment. Classified according to the clinical diagnosis, they fall into the following groups: tabes, 6 per cent.; optic atrophy, 0.8 per cent.; general paralysis, 0.4 per cent.; cerebrospinal syphilis, 5.1 per cent.

Arsenic Content of Blood After Silver Arsphenamin Injection.—Analyses of the blood for its arsenic content after intravenous injections of silver arsphenamin were made of 299 specimens obtained from 214 patients. Analysis of blood taken immediately after the completion of the injection shows that 56.4 per cent. of the arsenic injected localizes outside the blood stream. The maximum quantity of arsenic in the blood stream, based on average values, is found immediately after injection. The value expressed in milligrams of metallic arsenic per hundred grams of dried specimen is 2.62.

Chancre in Axilla.—In Montgomery and Culver's case, wearing the wrapper of an infected woman and a pimple in the axilla caused the development of the chancre in the axilla.

Syphilis in Bechuanaland.—McArthur's contribution deals with a study of syphilis in the Bechuanaland natives. An abstract of the family histories of 1,009 cases is presented, and observations accruing from 538 cases which do not fall into family groups. The possible methods of transmission of syphilis are summarized, with special reference to conditions obtaining in Bechuanaland. The unique syphilization of families on a large scale is noted. The question of whether the disease is syphilis or frambesia tropica is dealt with. The evidence that it is syphilis is said to be conclusive. Evidence is had which suggests strongly the possibility of the transmission of syphilis to the third and subsequent generations. Variations in symptomatology between European syphilis and that seen in the Bechuanaland native are discussed. Most attention is given to (1) the absence of visceral lesions, (2) the apparent insusceptibility of the cerebrospinal axis to attack, (3) the high incidence of syphilis hereditaria tarda, (4) the marked chronicity and slow development of isolated lesions, and (5) the clinical characteristics of a prevalent favoid condition of the scalp locally known as "wit-kop." In this connection some account is given of a fungus described as a possible causative agent.

Annals of Surgery, Philadelphia

78: 129-304 (Aug.) 1923

Repair of Common Bile Duct. L. L. McArthur, Chicago.—p. 129.
Question of Size. W. J. Mayo, Rochester, Minn.—p. 139.
*Surgery of Thyroid and Its Mortality. C. H. Mayo and J. De J. Pemberton, Rochester, Minn.—p. 145.
*Many Stage Operation for Goiter. M. B. Tinker, Ithaca, N. Y.—p. 150.
*Eventration of Diaphragm. M. B. Clopton, St. Louis.—p. 154.
*Cardioplasty for Cardiospasm. S. H. Watts, Charlottesville, Va.—p. 164.
*Operation for Relief of Cardiospasm Associated with Dilatation and Tortuosity of Esophagus. L. Freeman, Denver.—p. 173.
*Pancreatic Asthenia as Postoperative Complication in Patients with Lesions of Pancreas. A. O. Whipple, New York.—p. 176.
*Splenectomy in Hemorrhagic Purpura. J. M. Hitzrot, New York.—p. 185.
Special Points in Gallbladder Surgery. G. W. Crile, Cleveland.—p. 191.
*Mortality Following Operations on Liver, Pancreas and Biliary Passages. E. S. Judd and J. H. Lyons, Rochester, Minn.—p. 194.
*Use of Cautery in Peptic Ulcer. D. C. Balfour, Rochester, Minn.—p. 205.
*Cancer of Colon. R. T. Miller, Baltimore.—p. 209.
Embryoma of Kidney: Report of Three Cases. H. Gage and *D. S. Adams, Worcester, Mass.—p. 226.
Certain Features of Renal Calculus. Report of Fifteen Cases. E. Eliot, Jr., New York.—p. 231.
Ossification in Kidney Stones Attached to Renal Pelvis. Report of Two Cases. D. B. Phemister, Chicago.—p. 239.
*Operation of Choice in Surgery of Kidney. W. E. Lower, Cleveland.—p. 250.
Carcinoma of Bladder. Analysis of 131 Cases. J. B. Denver and W. H. MacKinney, Philadelphia.—p. 254.
*Pathologic Changes Occurring in Spinal Cord Following Fracture-Dislocation of Vertebrae. J. E. Thompson, Galveston, Texas.—p. 260.
Actinomycosis. Report of Cases. H. A. Bruce, Toronto.—p. 294.
Hernia Through Conjoined Tendon or Hernia of Linea Semilunaris. F. S. Mathews, New York.—p. 300.

Mortality from Surgery of Thyroid.—The reduction of the mortality in surgery of exophthalmic goiter to 1 per cent. is attributed by Mayo and Pemberton to three factors: (*a*) Patients with exophthalmic goiter are coming to operation earlier in the course of the disease, before the development of visceral degenerative changes; (*b*) by the combined medical and surgical management, the development of postoperative, acute, hyperthyroidism has been reduced to a minimum, and (*c*) a clearer recognition of the dangers involved in the injury of the recurrent laryngeal nerve has led the surgeon to greater care in its avoidance. The combined medical and surgical management of patients with exophthalmic goiter is warranted from the economic standpoint, as it has reduced the necessity for ligations.

Many Stage Operation for Goiter.—Operation divided into many independent stages, in Tinker's opinion, not only makes it possible to save the lives of most of these desperately ill patients, but with the many stage operation, it is easier to enforce the rest and care indispensable to ultimate complete recovery, especially in those cases with dilated hearts and myocardial degeneration. The disadvantages of greater scarring, prolonged hospitalization and increased expense, seem trivial when safety and permanent recovery are considered. The advantages of preliminary ligation will be more fully realized when the pole of the gland is well exposed, so as to make certain the securing of all vessels, great and small, main and collateral. Many stage excision, with wound packing, is best reserved for the few cases in which it has proved impossible by careful preliminary study correctly to estimate the gravity of the patient's condition, and unexpected grave symptoms develop during operation. In such cases it saves life, and the disadvantages of slight risk of infection and additional scarring scarcely deserve consideration.

Eventration of Diaphragm.—Both Clopton's patients presented the same findings. There was a high lying diaphragm on the left side, with the stomach, spleen and large intestine occupying the space usually filled by the lung. The heart was

in the right chest. The stomach was large. The large intestine was also dilated and enlarged. The liver was vertical and right sided. The chest wall showed a slight bulging of the lower half of the left side.

Cardioplasty for Cardiospasm.—A cardioplasty, resembling the Finney pyloroplasty, was done in Watts' case. An old gastrostomy opening from a previous operation was closed and a new Frank gastrostomy made. Fourteen months later the patient was perfectly well and could swallow any kind of food without difficulty.

Operation for Relief of Cardiospasm.—In Freeman's case beginning just above the cricoid and extending further down behind the sternum than the finger could reach, the esophagus was uniformly dilated into a great, slack, thin-walled, saclike tube, around which the examining finger easily could be swept within the mediastinum. Freeman pulled upward on the dilated tube until a large fold, including the entire circumference protruded through the incision in the neck, and the portion below was rendered quite taut. There was no difficulty in accomplishing this, owing to the surprisingly loose manner in which the esophagus seemed to hang within the mediastinum. It was decided to invaginate the upper segment of the loop into the lower, without opening its lumen, thus restoring to the tube something of its proper length and longitudinal tension. This intussusception, maintained by means of a few stitches of chromic gut, formed such a bunch in the esophagus that, fearing its complete occlusion, a stomach tube was passed and left in place for a few days. Up to the present time, twenty years later, he has had no return of his trouble, except an occasional slight dysphagia.

Pancreatic Asthenia as Postoperative Complication.—In a series of 230 consecutive unselected cases of disease of the biliary tract and pancreas operated on by Whipple, forty showed definite pancreatic lesions. Eighteen of these cases presented the complication which, because of its most striking and constant symptom, asthenia, has been named pancreatic asthenia. It is characterized by extreme asthenia, anorexia—in some cases a very loathing for all food—apathy, nausea and vomiting, a marked drop in blood pressure and rapid loss of weight. In some cases there has been noted, in addition, a tendency to hemorrhage, with and without jaundice or biliary fistula, ptyalism, pain and tenderness over the pancreas, obstipation and diarrhea. Pancreatic asthenia has appeared at intervals after operation, varying from the second to the ninth day, and has lasted for periods varying from two to thirty days, the average period being twelve days. The symptoms appear, as a rule, after the patient has recovered from the shock of the operation, when he is apparently doing well. In the patients recovering from this condition the change for the better is often surprisingly abrupt, appearing with a sudden return of appetite and relish for food. It differs from the cholemic state seen in cases with long standing biliary obstruction and damaged liver. These patients with pancreatic asthenia are never comatose. They maintain a clear sensorium, and are never delirious. Languor and apathy are pronounced; weakness is the chief complaint. Of eighteen patients showing this syndrome, eight died while in the hospital; of five showing carcinoma, three died after leaving the hospital in from two to twenty-six months. All of the surviving seven patients show a symptomatic relief from all symptoms from twelve to fifty-six months after operation.

Splenectomy for Hemorrhagic Purpura.—In a case cited by Hitzrot removal of the spleen had a definite effect in the idiopathic type of hemorrhagic purpura and this effect seemed to be related in some way to the change in the bleeding time and in the number of the blood platelets.

Mortality Following Operation on Liver and Bile Passages.—This study by Judd and Lyons concerns the mortality following operations at the Mayo Clinic during 1922, for diseases of the gallbladder and associated viscera. Of the twenty-two cases in which an operation for primary disease of the liver was performed, one patient, who had carcinoma, died from pneumonia. Following thirteen operations for unusual conditions of the gallbladder and ducts, two patients died. Forty-five cholecystectomies were performed for acute cholecystitis with no deaths, and twenty-two cholecystostomies with one death. Of the four deaths in 150 operations on the common duct not one resulted from hemorrhage, in spite of the fact that many of the patients were deeply jaundiced at the time of operation. All of these jaundiced patients were given careful preparatory treatment. Following twelve hepaticoduodenostomies with reconstruction of the common duct, there were three deaths, one due to shock, one to hemorrhage, and one to hepatic insufficiency. A few cases of "liver-shock" have been observed. Possibly, because of the sudden release of pressure in the common duct, the reaction in the liver may result in shock. One of the deaths from this condition occurred a few hours after a not unusually difficult operation in which very little blood was lost, and not enough trauma produced to cause shock. There were twelve cases of obstructive jaundice. In nine of these, the gallbladder was anastomosed to the stomach or duodenum, or the common duct or gallbladder was drained, and nothing further attempted; two of the nine patients died. Of patients operated on for pancreatic diseases, two died. One of these was operated on for cancer of the pancreas producing deep jaundice. The gallbladder was anastomosed to the duodenum. Death resulted from pneumonia two weeks later.

Use of Cautery in Peptic Ulcer.—The cautery for the excision of certain types of peptic ulcer was employed by Balfour in 725 cases. The cautery is valuable in its applications to three groups of cases: (1) small gastric ulcers in any situation; (2) ulcers of any size in a situation of difficult accessibility, and (3) bleeding gastric or duodenal ulcers.

Cancer of Colon.—One hundred and twenty-nine cases of cancer of the colon, exclusive of the rectum, have been analyzed by Miller. Fifteen per cent. of the patients were less than 35 years of age. Only a little over one half presented a history of partial intestinal obstruction. Forty per cent. had shown no symptoms of obstruction; 40 per cent. had a definite history of chronic obstruction, and 20 per cent. were admitted with acute obstruction or had previously survived such an attack. The history of partial obstruction, when given, extended over the better part of a year before admission for treatment; those lacking this feature presented other symptoms, which had been recognized by the patient for a period of comparable length. Resection produced a five year cure in 10 per cent. of all the cases admitted and in 28 per cent. of those surviving resection. There is reason to believe that if a case is curable by surgical means this result will be achieved just as surely by local excision of the growth-bearing portion of the gut as by an operation of much greater extent; from the standpoint of cure, therefore, limited resection, which definitely clears the growth, appears to meet the situation, but the arrangement of the circulation of the colon is such that a much more extensive resection may be needed in order to be assured of the viability of the remaining tissues.

Operation of Choice in Surgery of Kidney.—In Lower's opinion no inclusive statement can be made regarding the operative management for any type of kidney lesion. All the factors in the individual case must be considered in making a decision as to the proper operative procedure. If the proper preoperative precautions be taken and a careful choice of operation be made, the mortality rate of operations on the kidney will not be high. In Lower's series the mortality rate has been 1.7 per cent.

Treatment of Fracture Dislocation of Vertebrae.—Thompson is strongly opposed to operation as a routine practice in these cases. It is often unsafe, rarely justifiable and usually futile. Except in the rare instances in which median incision of the cord is the objective, mere exposure of the injured segment is all the surgeon can hope to accomplish, because deformity is seldom persistent and massive hemorrhages do not occur. Thompson believes that the only positive indication for operation is the persistence of deformity of such degree as to justify the assumption that the cord is subjected to pressure. Even with such strict limitations, incomplete lesions alone would be benefited. If it were possible to distinguish with certainty complete from incomplete transverse lesions in the early period, the problem would be solved. At the present time, it is impossible to decide, consequently one must either wait days or weeks for unequivocal signs or operate early in

the hope of affording relief. Thompson firmly believes that waiting is the best and safest course.

Boston Medical and Surgical Journal

189: 335-362 (Sept. 6) 1923

*Heart Murmurs in Infancy and Childhood. J. L. Morse, Boston.—p. 335.
*Treatment of Whooping Cough in Private Practice. W. W. McKibben, Worcester.—p. 339.
*Factors Governing Gain in Weight in First Year. F. H. Allen and E. P. Bagg, Jr., Holyoke.—p. 349.

189: 363-392 (Sept. 13) 1923

General Management of Tuberculosis. G. E. Bushnell, Fort Bayard, N. M.—p. 363.
Sanatorium Treatment. E. B. Emerson, Rutland.—p. 369.
Home Treatment of Pulmonary Tuberculosis. E. T. Shields, New York.—p. 374.
Symptomatic Treatment of Tuberculosis. E. O. Otis, Boston.—p. 374.

Heart Murmurs in Children.—Morse directs attention to the fact that a precordial murmur in a child does not necessarily indicate that it has organic "heart disease." In fact, the chances are that it has not and that the murmur is due to some other cause and has no pathologic significance. It is also evident that no examination of the heart is complete and that no conclusions are justified, unless the size of the heart, the character of the heart sounds, the intensity of the second pulmonic sound, the condition of the other organs, and that of the child as a whole, as well as the location and character of the murmur and how it is affected by respiration and position are investigated. If all these points are taken into consideration, it is usually possible to determine whether a precordial murmur is organic or not, and, if it is, whether the lesion which causes it is serious or not.

Vaccine Treatment of Whooping Cough.—McKibben reports good results from the use of pertussis bacillus vaccine in whooping cough, not only to prevent the disease after exposure, but also, particularly, in treatment after the paroxysms have begun. Infants respond more quickly to the vaccine than do older children. Even if nontuberculous bronchopneumonia has already developed, the chances of success are by no means hopeless.

Factors Governing Gain in Weight of Infants.—Analysis of five hundred consecutive cases observed by Allen and Bagg during the past five years indicates that babies born overweight, in the main, do better than do those of normal birth weight, or those underweight. Normal weight babies of the second pregnancy, however, outran both of the other groups. Babies born under weight ran lowest in ability to gain in weight at the normal rate. Abnormalities tend definitely to subvert normal gain in weight, but not particularly in any one group. Hospital born babies enjoy a distinct advantage over those born at home in likelihood of normal gain. The prolonged use of breast milk, alone or supplemented, tends to increase the rate of gain in weight. Diarrhea is the most frequent of the complications, and ranks highest among the diseases tending to prevent the normal rate of gain in weight.

189: 393-424 (Sept. 20) 1923

History and Observation in Cardiac Disease. W. H. Robey, Boston.—p. 393.
Hospital Administration Under Eighteenth Amendment. G. G. Sears, Boston.—p. 397.
*Uremia. Syndrome of Nitrogen Retention. H. M. Feinblatt, Brooklyn, N. Y.—p. 399.
*Bacillus Acidophilus Milk and Its Therapeutic Effects. H. A. Cheplin, C. D. Post and J. R. Wiseman, Syracuse, N. Y.—p. 405.
Surgical Importance of Torsion Deformities. C. L. Lowman, Los Angeles.—p. 411.
Health for People of Boston. M. Beard, Boston.—p. 414.

Nitrogen Retention and Uremia.—Feinblatt presents a study of uremia on the basis of nitrogen retention. Instead of investigating the blood chemical findings in patients clinically considered uremic, the method pursued was to analyze the other evidences exhibited by patients with known nitrogen retention. Urea nitrogen retention was the criterion on which this study was based. The clinical records of patients whose urea nitrogen readings equalled or exceeded 50 mg. per hundred cubic centimeters of blood were analyzed. The urea nitrogen values appeared to furnish a reliable index to the progress of the case, much more so than the clinical picture. Increases to figures of 300 mg. per hundred cubic centimeters of blood invariably portended early death. Uric acid readings were quite variable and bore an uncertain relation to the severity of the case. Although there was always some degree of retention, this was often moderate, even in comatose, moribund patients, with maximal grades of urea and creatinin retention. Creatinin tended to rise in the same proportion with urea nitrogen. Retention of this substance was found to be of great prognostic value. The study of the etiologic factors would indicate that heredity, sex and occupation are not important predisposing causes. The most important underlying renal condition responsible for uremia was chronic glomerular nephritis, being present in thirty-four of forty-eight cases. Acute glomerular nephritis was accountable for only two cases. Tonsillitis and scarlatina were the most frequent antecedent infections. The symptomatology revealed a striking similarity to nephrectomized animals and to instances of total deprivation of renal function in man. Concurrent cardiac decompensation was undoubtedly responsible for the dyspnea and edema in many instances. Eclamptic evidences were infrequent. Convulsions were observed in only six patients, and then only within an hour of death. A moderate grade of secondary anemia was observed in the great majority of patients. The evidences revealed by ophthalmoscopy were papilledema, albuminuric retinitis, retinal hemorrhages and vascular degeneration. Cardiac hypertrophy was positively determined in twenty-seven cases. The average systolic blood pressure was 171; diastolic, 108; pulse pressure, 63. Myocardial insufficiency and lobar pneumonia were the most important complications. Forty-three of the patients died. Only one left the hospital improved.

Therapeutic Effects of Bacillus Acidophilus Milk.—Experiments were carried out by Cheplin, Post and Wiseman with the object of extending the observations on the therapeutic value of the oral administration of viable acidophilus milk cultures on a larger group of clinical cases. These facts emerge: The fundamental principles on which the acidophilus milk therapy is based should be strictly adhered to if favorable results are expected. The acidophilus milk therapy is not a cure for all kinds of ailments, nor will all cases of gastro-intestinal disturbances necessarily respond to this mode of treatment. It is not an elixir, nor a so-called "longevity bug" in the sense that *Bacillus bulgaricus* was hailed. The ingestion of relatively few acidophilus bacilli will not lead to implantation and bodily improvement. A minimum amount of the culture, containing, on the average, 50 billions of viable organisms, should be administered each day for at least six weeks or longer to effect clinical improvement. Acidophilus tablets can be of no use whatever in bringing about transformation of the flora and relief from trouble. The authors strongly advocate the adoption of the *Bacillus acidophilus* milk culture as the surest and most effective means of attaining the desired results.

California State Journal of Medicine, San Francisco

21: 277-318 (July) 1923

Medical Treatment of Peptic Ulcer. P. K. Brown, San Francisco.—p. 277.
*Adenosarcoma of Kidney in Young Child. A. J. Hood and H. Albert, Reno, Nev.—p. 281.
Histologic Study of Results Obtained Through Instrumental Treatment of Pyorrhea. F. V. Simonton, San Francisco.—p. 283.
Neurologic Aspects and Late Symptoms of Epidemic Encephalitis. T. G. Inman, San Francisco.—p. 285.
Surgery of Gallbladder. S. Bunnell, San Francisco.—p. 287.
*Cardiac Decompensation During Pregnancy and Labor. K. L. Schaupp, San Francisco.—p. 290.
*Physiologic Basis for Employment of Calcium in Treatment of Asthmatic Paroxysms. F. M. Pottenger, Monrovia, Calif.—p. 293.
Brain Injuries. E. Butler, San Francisco.—p. 295.
Treatment of Diabetes. A. F. Willier, San Diego.—p. 297.
Clinical Uses of Oxygen. L. A. Rethwilm.—p. 300.
Diagnosis and Cure of Gonorrhea. G. W. Hartman, San Francisco.—p. 303.

Adenosarcoma of Kidney in Child.—Hood and Albert report a case in a child, aged 2½ years. At operation several small metastases were seen in adjacent loops of intestine. A loop of the ileum was incorporated in the mass and required resection for its removal. The child died on the third day after the operation.

Cardiac Decompensation During Pregnancy.—In 1,395 pregnant patients seen in the Stanford Women's Clinic and the

Stanford Obstetric service at the San Francisco Hospital, cardiac disease, other than functional murmurs, was diagnosed thirty-eight times. Mitral insufficiency was most common, occurring eighteen times; mitral insufficiency, complicated with stenosis, was observed six times. Of the thirty-eight patients with decompensation twenty-three had albuminuria and four had casts, nineteen had dyspnea, seventeen palpitation, fourteen cough, fourteen edema, thirteen pain and four had irregularity of pulse. While dyspnea was the most common symptom, it was usually present in a moderate degree and with palpitation and slight edema was often the only sign of decompensation. In the more serious cases, however, cough and precordial pain were the most constant symptoms and were often very difficult to control. It was in the cases of coughing and pain that the gravest decompensation was found, and here intervention was more often necessary. Irregularity of the pulse, while not frequent, was almost always associated with a serious lesion. The time of appearance of symptoms varied, but in most of the twenty-four cases that occurred antepartum they began after the sixth month, and of these the majority appeared during the last six weeks. An important point brought out in this investigation was the relation of the blood pressure to decompensation, and it may be an important factor in prognosis. In nearly all cases on returning compensation the blood pressure showed a rise, even in cases in which it already was above normal.

Calcium and Asthma.—The extended concept of the patient's reaction during paroxysms of asthma, in Pottenger's opinion, implies that these reactions are an expression of a hyperactivity of the vagus-potassium system. Whether this is actually a hyperirritability of the sympathetics and a lessening of the cellular content in calcium or a hyperirritability on the part of the vagus and an increase in the potassium content of the cell, Pottenger does not know, but that there is a relative hyperacidity of the parasympathetics and of the potassium content of the cells is evident, not only from the symptomatology, but from the measures that are used to combat the paroxysms. Calcium is definitely identified with sympathetic, and potassium with parasympathetic action. Reasoning from this concept of the neurochemical control of activity in the bronchial tissues, Pottenger tried to relieve the paroxysms in a severe case of asthma by producing a relative increase in the calcium content of the body cells. The remedy was given in the form of calcium chlorid, in doses of 5 c.c. of a 5 per cent. solution, intravenously. After the second dose, which was given two days after the first, improvement was noted, and after three doses she was entirely relieved of paroxysms. In each of three other cases the paroxysms have been completely relieved.

21: 319-362 (Aug.) 1923

Some Responsibilities and Duties of Medical Organizations. T. C. Edwards, Salinas.—p. 319.
"Eugenics" from Physician's Standpoint. H. G. Brainerd, Los Angeles.—p. 321.
Reminiscences of Three Eminent San Francisco Physicians. W. F. Cheney.—p. 325.
*Heart Failure. R. K. Barry, San Diego.—p. 328.
Surgery of Gallbladder. S. Bunnell, San Francisco.—p. 330.
Precancerous Skin Lesions. M. Schultz, Los Angeles.—p. 334.
Growing Emphasis on Rest in Treatment of Pulmonary Tuberculosis. P. K. Brown, San Francisco.—p. 336.
Open Treatment of Fractures of Femur. C. E. Phillips, Los Angeles.—p. 339.
Medical History and Trends of Psycho-Analysis. R. L. Richards.—p. 340.

Heart Failure.—The fact that more than half the number of persons hospitalized for heart disease are fibrillators, and considering the number of cases due to coronary disease, the number of cases of impairment of function due to the different types of heart block, myocardial degenerations, and toxic poisoning, Barry says, carries the conviction that chronic valvular diseases play a very unimportant part in the causation of heart failure, and that many patients die from disturbance of heart function who have a very good heart muscle.

Georgia Medical Association Journal, Atlanta

12: 221-262 (June) 1923

Some Tendencies in Modern Medicine. L. M. Warfield, Ann Arbor, Mich.—p. 224.
Ureteral Calculus in Six Year Old Child. Case Report. W. W. Anderson and W. R. Holmes, Atlanta.—p. 234.

12: 263-304 (July) 1923

Some Unreported Methods and Experiences. Pneumonia in Children. E. C. Thrash, Atlanta.—p. 263.
Recurrence of Prostate. W. L. Champion and A. F. Caldwell, Atlanta.—p. 265.

12: 347-388 (Sept.) 1923

Medical Ethics. J. B. Baird, Atlanta.—p. 347.
Consideration of Ovarian Tumors of All Types. T. P. Waring, Savannah.—p. 353.
Vital Capacity Readings. Their Value in Clinical Medicine. R. Lattimore, Savannah.—p. 359.
Study of Symptomatology in Neurosyphilis with Especial Reference to Early Subjective and Objective Manifestations. L. M. Gaines, Atlanta.—p. 363.
Insulin in Treatment of Diabetes Mellitus. J. E. Paulin and H. M. Bowcock, Atlanta.—p. 368.
*Atypical Facial Neuralgia Relieved by Introduction of Solution in External Auditory Canal: Preliminary Report. J. D. Thompson, Atlanta.—p. 377.

Cantharides-Magnesium Sulphate Solution in Treatment of Atypical Facial Neuralgia.—Thompson introduces into the external auditory canal a solution consisting of 4 drams of filtered 35 per cent. solution of tincture of cantharides, 1 ounce of magnesium sulphate and 2 ounces of glycerin. The canal is filled with the solution, which should be retained for twenty or thirty minutes. The treatment should be repeated two or more times daily until relief from the neuralgic pains is experienced. It is then discontinued, until the pain returns.

Journal of Experimental Medicine, Baltimore

38: 233-326 (Sept.) 1923

*Leishmania Donovani in Peripheral Blood. C. W. Young and H. M. Van Sant, Peking, China.—p. 233.
*Mesenchyme and Mesothelium. W. H. Lewis, Baltimore.—p. 257.
*Studies on Endothelial Reactions. VIII. Changes in Distribution of Tubercle Bacilli and Tubercles in Organs of Rabbits Following Splenectomy. W. C. Foot, Cincinnati.—p. 263.
*Effect of Peptone on Peripheral Circulation. J. F. Simonds and S. W. Ranson, Chicago.—p. 275.
*Protection Against Typhoid-Like Infections by Vaccination. H. J. Nichols and C. O. Stimmel, Washington, D. C.—p. 283.
Oxidase Reaction of Various Groups of Bacteria. L. D. Felton, New York.—p. 291.
*Studies on Roentgen-Ray Effects. XIII. Histologic Study of Fate of Cancer Grafts Inoculated into Roentgenized Area. W. Nakahara, New York.—p. 309.
Studies on Lymphoid Activity. VII. Suppression of Induced Immunity to Transplanted Cancer by Large Doses of Olive Oil. W. Nakahara, New York.—p. 315.

Leishmania Donovani in Peripheral Blood.—The effect of human red cells and serum on the growth of *Leishmania donovani* has been studied by Young and Van Sant and, based on these findings, a blood culture method was devised. The distribution of blood platelets and of the different varieties of leukocytes in the strata of centrifugalized diluted blood has been investigated, and also the distribution of Leishman-Donovan bodies, extracellular and intracellular, in these strata. The effect of treatment with antimony on the cultivability of *Leishmania donovani* has been studied. In the series of cultures made, the blood of patients treated intravenously with antimony salts became free from cultivable *Leishmania donovani* after they had received about 12 mg. of antimony per kilogram of body weight.

Mesenchyme and Mesothelium.—Lewis' observations indicate that in the healing of wounds of the mesothelium lining the peritoneal, pleural and serous cavities, new mesothelium may arise from the subjacent mesenchyme by the change in form of its cells, and that the repair after abrasions of the mesothelium is not necessarily brought about by a spreading of the adjacent mesothelium over the wound, such as occurs in repair of skin wounds.

Effect of Splenectomy on Tubercle Bacilli.—Splenectomy in rabbits, followed by the intravenous injection of tubercle bacilli, Foot asserts, produces a changed distribution of these bacilli and of the lesions they cause. The pulmonary lesions are fewer, more discrete, exhibit a larger number of polymorphonuclear leukocytes, and contain, as a rule, more tubercle bacilli than do those of controls. The lesions in the liver are far more numerous and destructive in the splenectomized, than in the control animals. The tubercles produced in the kidney do not show so marked a difference between the two groups as is noted in the lung and liver, but they are fewer and less well developed in the kidneys of the splenec-

tomised rabbits. The course of the disease is not affected materially by splenectomy; if anything, it is rendered slightly more rapid; although the lung is less affected, the liver is so extensively invaded as to offset all the advantage that may have been gained by the decreased pulmonary involvement.

Effect of Peptone on Peripheral Circulation.—Injection of a solution of peptone directly into the artery of the leg of a dog is followed by an abrupt increase in leg volume. This is of short duration and is quickly followed, usually in less than one-half minute, by a decrease in the volume of the limb below that previous to the injection. The phases of the leg volume curve bear a fairly definite relation to the changes in arterial pressure. These results, therefore, indicate that the long continued low arterial pressure in peptone shock, and probably in anaphylactic shock, may be hastened but is not maintained by peripheral dilatation, and suggest that there is an impounding of the blood in some other part of the body.

Vaccination Against Typhoid-Like Infections.—A natural infection of guinea-pigs with the "mutton" strain of *Bacillus aertrycke* was used by Nichols and Stimmel to test the protective power of vaccination against the typhoid group of infections. Complete protection was secured by vaccination with full strength fresh saline vaccine, while death occurred among 100 per cent. of the controls. Vaccine kept from ten to fourteen months gave less protection than vaccine eight months old and less. Saline vaccine was more effective than lipovaccine, sensitized vaccine, or supernatant fluid vaccine. Resuspended vaccine was as effective as the original vaccine.

Fate of Cancer Grafts in Roentgenized Area.—Cancer cells implanted in a skin region previously exposed to an erythma dose of roentgen-rays showed a series of degenerative changes in every way comparable to the frequently described stages of cancer cell degeneration following roentgen-ray treatment. The findings contrast strongly with the survival and growth of grafts implanted in unexposed regions in the same animal. Since the changes are the same whether the cancer cells have been directly exposed in situ or merely implanted in the previously exposed skin, it follows that it is impossible to establish microscopically a direct injury from the roentgen-ray irradiation as the principal factor in the therapeutic action of roentgen rays on cancer.

Journal of Immunology, Baltimore

8: 323-424 (Sept.) 1923

Studies in Endothelial Permeability. I. Effect of Epinephrin on Endothelial Permeability. W. F. Petersen, S. A. Levinson and T. P. Hughes, Chicago.—p. 323.
Id. II. Rôle of Endothelium in Canine Anaphylactic Shock. W. F. Petersen and S. A. Levinson, Chicago.—p. 349.
Id. III. Modification of Thoracic Lymph Following Portal Blockade. W. F. Petersen, R. H. Jaffe, S. A. Levinson and T. P. Hughes, Chicago.—p. 361.
Id. IV. Modification of Canine Anaphylactic Shock by Means of Endothelial Blockade, Chicago.—p. 367.
Id. V. Effect of Peptone on Permeability of Endothelium, Chicago. —p. 377.
Id. VI. Alterations of Thoracic Lymph Following the Injection of Old Tuberculin in Normal and Tuberculous Dogs. W. F. Petersen, R. H. Jaffe, S. A. Levinson and T. P. Hughes, Chicago.—p. 387.
*Failure of Peptone to Protect Against Anaphylactic Shock and Allergic Conditions. N. P. Larsen, A. V. E. Haigh, H. L. Alexander and R. Paddock.—p. 409.

Failure of Peptone to Protect Against Anaphylactic Shock.—Guinea-pigs sensitized to egg white, receiving peptone intracardially thirty minutes before the shock dose of egg white, showed no protection against anaphylactic shock in comparison with sensitized guinea-pigs not treated with peptone. Guinea-pigs sensitized to egg white and receiving thereafter serial intracardial peptone injections were similarly found to be unprotected against anaphylactic shock. Clinically, the use of peptone intravenously in bronchial asthma according to the method of Auld, has been disappointing to Larsen et al. and is considered dangerous.

Journal of Infectious Diseases, Chicago

33: 193-268 (Sept.) 1923

Study of Coagulum or Pellicle and of Fibrinogen Nitrogen in Cerebrospinal Fluid. A. Levinson and D. Kirschenbaum, Chicago.—p. 193.
Influence of Surface Tension Depressants on Growth of Streptococci. VI. Studies of Streptococci. S. H. Ayers, P. Ruff and W. T. Johnson, Jr., Washington, D. C.—p. 202.
*Effect of Suprarenalectomy in Rabbits on Hemolysin Formation. N. M. Také and D. Marine, New York.—p. 217.
*Specific Erythroprecipitins (Hemoglobin Precipitins?). II. Hemoglobin Precipitins in Identification of blood. L. Hektoen and K. Schulhof, Chicago.—p. 224.
*Studies in Comparative Immunity. II. Relative Importance of Liver and Spleen in Destruction of Foreign Blood Cells in Rabbits. F. L. Pickof, Chicago.—p. 230.
*Effect of Spices on Growth of Clostridium Botulinum. F. M. Bachmann, Madison.—p. 236.
Serologic Agglutination of Bacillus Sporogenes. I. C. Hall, and N. Stark, Berkeley, Calif.—p. 240.
*Specificity of Streptococcus of Gastroduodenal Ulcer and Certain Factors Determining Its Localization. E. C. Rosenow, Rochester, Minn. —p. 248.

Effect of Suprarenalectomy on Hemolysin Formation.—Fourteen rabbits in which a high grade but sublethal suprarenal insufficiency was created by removal of both main suprarenal glands were immunized with sheep cells by Také and Marine. These rabbits showed hemolysin titers averaging more than twice as high as the controls. It is believed by the authors that the increased antibody formation is due to the loss of some regulatory and inhibitory influence which the interrenal gland normally exerts on the irritability and susceptibility of the body cells. This influence may involve physical and chemical alterations in their "lipoid" mechanism.

Hemoglobin Precipitins in Identification of Blood.—Hektoen and Schulhof record further observations on the specificity of the precipitin reaction connected with hemoglobin, particularly because this reaction may be of practical value in the identification of blood under certain conditions. The precipitinogen in extracts of red corpuscles and purified hemoglobin differs from the antigens in the stroma. The results presented in this article indicate that hemoglobin precipitins may be of value in the identification of blood. The precipitin test for hemoglobin is fully as specific and as sensitive as the precipitin test for serum, if not more so. The authors point out that the possible overlapping of the reaction in related species merits consideration and further study, and, naturally, careful control tests must be made in all cases. The advantage of the hemoglobin test should be that it is a direct test for blood only. The serum precipitin test is a test for species protein in general, and whether blood is present is determined by other and nonspecific tests. It is possible that a blood spot giving a precipitin reaction for human protein, and, therefore, apparently human blood, might be made or claimed to be made by animal blood falling on a place previously stained by human protein in sputum, albuminous urine or any kind of bloodless exudate. In problems of this kind, the precipitin test for hemoglobin may be of decisive value.

Relative Importance of Liver and Spleen in Destruction of Foreign Blood Cells.—Pickof's work gave evidence that in rabbits, chicken blood cells injected intravenously rapidly disappear from the general circulation. The great majority of the injected red cells accumulate within the capillaries of the liver, and the remainder in the capillaries of the spleen and bone marrow where they are destroyed. The destruction of the injected cells is definitely extracellular, but within the organ capillaries and not in the general circulation. Only a few Kupffer cells were found to contain remnants of ingested red cells. Splenectomy delays neither the disappearance of the injected red cells from the general circulation, nor their destruction in the organs.

Effect of Spices on Growth of Clostridium Botulinum.—Experiments were made by Bachmann with *Clostridium botulinum* in mince meat and also in meat containing ground cloves, cinnamon, allspice, nutmeg, black mustard, white mustard, cayenne pepper and ginger in amounts of 1, 2 and 2.5 per cent. to determine whether such spices, in these amounts, inhibit the growth of *Clostridium botulinum* or prevent the formation of its toxin. No inhibition of growth was found in 1 and 2 per cent. of spice, but there was some retardation with allspice and cloves when 2.5 per cent. was used. The organisms readily form toxin in the presence of this amount of spice. Therefore, spices used in flavoring foods do not help to make the food safe if there is contamination with *Clostridium botulinum*. For safety such foods as mince meat should be sterilized or else heated to the boiling point before they are tasted.

Specificity of Streptococcus for Gastroduodenal Ulcer.—The experimental studies reported by Rosenow corroborate and extend his earlier results with regard to the importance of the streptococcus as a causative factor in ulcer. The maintenance of specific infecting and localizing power under relatively anaerobic conditions in latent life for as long as eight and one-half years, he believes, has important bearing on the question of the chronicity of ulcer and on recurring exacerbations after intervals of quiescence. The streptococcus of ulcer produces a poison within its substance and free in broth cultures which injuries selectively the mucous membrane of the stomach, producing hemorrhages, leukocytic infiltration and ulcer. Hence, localization and growth of the living organism in the mucous membrane of the stomach may be favored by this specific poison. The presence of the streptococcus in the ulcers in dogs, produced by the method of Mann and Williamson, its elective localizing power on intravenous injection, its presence in foci of infection, and its ability to produce this poison in vitro, indicate that it is not a secondary invader, but that it plays an important part in the production of these ulcers. The results of the immunization experiments indicate that the streptococci from ulcer, even of different species, are closely related and probably specific of this disease; that a practical method for preserving specific antigenic power has been developed, and that active and passive immunization should prove helpful in the prevention and treatment of gastroduodenal ulcer in man.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

22: 1-57 (Aug.) 1923

*Influence of Vagus on Heart Rate. J. H. Crawford, Edinburgh.—p. 1.
Effect of Light on Behavior of Rats After Injections of Quinin and Quinidin Sulphate. D. I. Macht and E. J. Teagraden, Jr., Baltimore. —p. 21.
Pharmacodynamic Analysis of Cerebral Effects of Atropin, Homatropin, Scopolamin and Related Drugs. D. I. Macht, Baltimore.—p. 35.
Pharmacologic Comparison of Six Alcohols, Singly and in Admixture on Paramecium. C. E. Bills, Baltimore.—p. 49.

Influence of Vagus on Heart Rate.—The age incidence of maximum vagal activity in normal persons, according to Crawford, is from 10 to 40, being at its height from 20 to 30. After this it steadily begins to decline, there being a marked fall after 50. There is considerable individual variation, especially in young persons. There is no difference between the two sexes in their reaction to atropin as studied by the increase in heart rate. The increase in heart rate after atropin administration cannot be foretold from the heart rate before injection. There is a diminished reaction to atropin in all cases of chronic heart disease, in which the sino-auricular node is in control, especially in aortic disease. Auricular fibrillation shows an increased reaction to atropin but is not comparable to the other heart conditions as the normal pacemaker is not in control. Typhoid fever and pneumonia during convalescence show a diminished reaction and exophthalmic goiter shows the same to a less extent. In convalescence from rheumatic fever and chorea the reaction to atropin is increased. It is suggested that the varied results obtained are due to three factors: (*a*) alteration of the tonicity of the cardio-inhibitory center; (*b*) changes in the vagal terminations in the heart itself, and (*c*) changes in the cardiac muscle.

Journal of Radiology, Omaha

4: 295-342 (Sept.) 1923

Twentieth Century Advances in Cancer Research. E. F. Smith, Washington, D. C.—p. 295.
Relative Value of Unfiltered Radium Emanation Deep Therapy. D. Quick, New York.—p. 318.
Routine Roentgen-Ray Examination of Nasal Sinuses by Four Projections. E. S. Blaine, Chicago.—p. 323.
Roentgen Rays and Roentgen Ray Apparatus. Elementary Course. J. K. Robertson, Kingston, Can.—p. 326.

Michigan State Medical Society Journal, Grand Rapids

22: 383-402 (Sept.) 1923

*Insulin and Mental State of Depression. D. M. Cowie, J. P. Parsons and T. Raphael, Ann Arbor.—p. 383.
Surgical Treatment of Thyroid Diseases. H. K. Shawan, Detroit.—p. 383.
Efforts Toward Simplification of Obstetric Care. R. S. Siddall, Detroit. —p. 388.
Prevention and Treatment of Simple Goiter. O. P. Kimball, Cleveland. —p. 390.
Case of Gastric Syphilis. R. C. Moehlig, Detroit.—p. 393.

Insulin and Mental Depression.—The authors have determined the following points: The prolonged glucose utilization curve of manic-depressive depression is easily made to conform to the normal curve by the administration of a certain amount of insulin. This amount of insulin may be a measure of the dysfunction of the pancreas or of the activity of the opposing factors.

Military Surgeon, Washington, D. C.

53: 89-206 (Aug.) 1923

Army Medical Museum, Washington, D. C. D. S. Lamb.—p. 89.
Kipling on John Hunter. F. H. Garrison.—p. 141.
Chemical Warfare and Its Relation to Medical Department. H. L. Gilchrist.—p. 144.
Future of Citizens' Military Training Camp. E. L. Ruffner.—p. 155.
Carrel-Dakin Treatment. Improvement in Adjusting Tubes in Superficial Wounds. H. Lilienthal.—p. 162.
Tularemia in Washington (D. C.) Market. E. Francis.—p. 164.

Ohio State Medical Journal, Columbus

19: 533-632 (Aug.) 1923

Surgical Indications in Goiter. R. C. Austin, Dayton.—p. 557.
Tumors of Breast. F. E. Bunts, Cleveland.—p. 561.
Prevention and Control of Heart Disease. W. H. Bunn, Youngstown. —p. 567.
Quantitative Measurement of Vibration Sensation. H. D. Piercy, Cleveland.—p. 572.
Glaucoma. A. B. Bruner, Cleveland.—p. 578.
Conservation of Vision in Incipient Cataract. J. W. Wright, Columbus. —p. 582.
Symbiosis of Private Practitioners in Medicine and Public Health Officials. H. L. Rockwood, Cleveland.—p. 583.

19: 633-704 (Sept.) 1923

Management of Diabetes Mellitus. C. W. McGavran, Columbus.—p. 637.
Etiology and Diagnosis of Glaucoma. W. H. Snyder, Toledo.—p. 642.
Surgical Treatment of Glaucoma. Modified Elliot-LaGrange Technic. D. T. Vail, Cincinnati.—p. 645.
*Laboratory Findings in Dementia Praecox. C. W. Sawyer, Marion.—p. 649.
Value and Interpretation of Blood Chemical Analyses in Neuropsychiatry. H. D. McIntyre, Marion.—p. 651.
Malnutrition and Its Effect. G. E. Robbins, Chillicothe.—p. 655.
Epilepsy and Protein Sensitization. L. P. Howell, Columbus.—p. 660.

Laboratory Findings in Dementia Praecox.—The blood in 107 cases of dementia praecox was analyzed by Sawyer. The red cell count was below normal in 43.3 per cent.; above normal in 34.9 per cent.; normal in 21.6 per cent. The white cells were below normal in 29 per cent., above normal in 51.5 per cent., normal in 19 per cent. The hemoglobin range was from 50 to 105 per cent. Eighty-one per cent. of the cases were below normal; 19 per cent. normal; 50 per cent. showed less than 70 per cent. of hemoglobin. The systolic blood pressure ranged from 80 to 190 mm. Sixty-nine per cent. of the cases were below normal; 17 per cent. above normal and 12.5 per cent. were normal. A positive Wassermann reaction was present in 31 per cent. The gonorrheal complement fixation test gave a positive result in 41 per cent.; the tubercular complement fixation in 30 per cent. Eighty-three per cent. of the cases showed indican and 66 per cent. diacetic acid in the urine. This suggests an autotoxic basis for the disorder or an autotoxic complication of significance. It also suggests a line of treatment.

Rhode Island Medical Journal, Providence

6: 131-146 (Sept.) 1923

Obstetric Shock. A. H. Miller, Providence.—p. 131.
China's Contributions to Medicine. E. H. Hume, Peking.—p. 137.

West Virginia Medical Journal, Huntington

18: 57-112 (Aug.) 1923

Report of 1923 Annual Meeting.—p. 57.

Wisconsin Medical Journal, Milwaukee

22: 105-150 (Aug.) 1923

Major Infections. W. J. Mayo, Rochester, Minn.—p. 105.
Chronic Indigestion in Childhood. J. L. Morse, Boston.—p. 112.
Practical Nutrition in Children. H. C. Johnson, Madison.—p. 118.
Roentgen Ray Diagnosis of Bone Lesions. R. W. Lovett, Boston.—p. 123.
And to Teach Them This Art. V. A. Chapman, Milwaukee.—p. 124.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

28: 65-96 (Aug.) 1923

Roentgen-Ray Cancer. J. H. Dible and J. M. W. Morrison.—p. 65.
*Elevation of Diaphragm. Unilateral Phrenic Paralysis. Radiologic Differential Diagnosis. J. M. W. Morrison.—p. 72.
*Large Submaxillary Calculus. J. H. Mather.—p. 84.
What Causes the Healing Action of Roentgen Rays? G. Holzknecht.—p. 85.
In Explanation of Action of Roentgen Rays Is It Necessary to Assume Functional and Growth Stimulation? F. Pordes.—p. 89.

Causes of Eventration of Diaphragm.—From a study of his own cases of eventration and of unilateral phrenic paralysis, along with those recorded by others, Morrison suggests that eventration of the diaphragm may be due to two causes: (1) a developmental defect in the formation of the muscular tissue of the diaphragm; (2) a unilateral phrenic paralysis due to injury or disease.

Large Submaxillary Calculus.—The calculus mentioned by Mather was the size of a hazelnut, weighed 3.88 gm. and measured 1.9 cm. in its longest diameter.

British Medical Journal, London

2: 445-490 (Sept. 15) 1923

Diabetes and Insulin. T. J. Horder and F. G. Banting.—p. 445.
Prevention and Treatment of Chronic Gonococcal Prostatitis and Vesiculitis. A. Reid, K. M. Walker and D. Watson.—p. 451.
Ventricular Complex of Electrocardiogram as Physical Sign in Cardiac Prognosis. J. E. MacIlwaine and S. B. B. Campbell.—p. 456.
Conservative Gynecology. A. E. Giles.—p. 459.
After-Effects of Certain Industrial Injuries, and Their Treatment by Roentgen Rays. R. A. Morrell.—p. 460.
Fat-Free Diet in Treatment of Sprue. T. H. Jamieson.—p. 462.
Hypersensitiveness to Quinin. F. E. Bell.—p. 462.
A "Privy" Birth. Resuscitation of Child After Two Hours. W. H. Lewis.—p. 462.

Edinburgh Medical Journal

30: 313-384 (Aug.) 1923

*Incidence of Venereal Disease in Scotland. T. F. Dewar.—p. 313.
Case of Rhinosporidiosis. J. H. Ashworth and A. L. Turner.—p. 337.
Colloidal Benzoin and Colloidal Gold Tests of Cerebrospinal Fluid. H. D. Wright and W. O. Kermack.—p. 352.
Some Ancient Mineral Wells in Scotland. W. G. A. Robertson.—p. 368.
*Case of Congenital Scoliosis. K. P. Brown.—p. 374.

Incidence of Venereal Disease in Scotland.—Figures from various sources are cited by Dewar. They show that syphilis in Scotland has its maximum prevalence in Glasgow and the other large centers, and that the incidence diminishes with decreasing density of population, until in the remote highland and insular parts it falls to a very low, though never to a trivial rate. In the cities and large towns from 3 to 5 per cent. of the children are born with congenital syphilis. On a survey of all statistics and estimates, it may be assumed that in Scotland, with a population of about four and three-quarters millions, on the very lowest computation, 12,000 new cases of syphilis are annually acquired. Two thirds of these are in men. Each year, in Scotland, the new infections of gonorrhea are from 35,000 to 70,000. At any given time, at the lowest estimate, 2 or 3 per cent. of the total population are infected by one or other of the venereal diseases. In the populous areas, the minimum figure is 5 per cent. for men and 2 per cent. for women. The tendency is certainly if not markedly toward reduction of incidence of both diseases.

Congenital Scoliosis.—The lesions in Brown's case were: (1) a thoracic scoliosis with its convexity to the right due to a congenital abnormality in the ossification of the vertebrae; (2) an alteration in the levels of the shoulders and a prominence of the right scapula which is secondary to the scoliosis and must be distinguished from a congenital high scapula which at first sight it resembles; (3) an alteration in the size of the right scapula, which may be explained by the fact that it has been prevented, by the spinal curvature, from taking up its normal function with consequent arrest of development.

Glasgow Medical Journal

100: 65-111 (Aug.) 1923

Treatment of Traumatic Defects of Skull. D. Duff.—p. 65.
Career of Alexander Maxwell Adams, M.D. (Erlangen), Poor-Law Reformer and Agitator. Arranged from Material Left by Him. A. M. Adams.—p. 73.

28: 113-159 (Sept.) 1923

Problem of Pyogenic Disease in Bone. C. Bennett.—p. 113.
*Protein Therapy: Its Use in Chronic Infectious Arthritis. J. C. Middleton.—p. 124.

Protein Therapy of Chronic Infectious Arthritis.—In the treatment of his cases Middleton used vaccines as the foreign protein. Some cases were treated with *Bacillus coli* vaccine, some with *Bacillus typhosus* vaccine, and the remainder with mixed typhoid vaccine containing *B. typhosus*, *B. paratyphosus* A and B. In the cases treated with *B. coli* vaccine the dose was 50,000,000 bacilli; in the other cases the dose contained 100,000,000 typhoid bacilli, either alone or with paratyphoid bacilli. The selected amount of vaccine was diluted with physiologic solution of sodium chlorid to 10 c.c. and the injection, at body temperature, was made intravenously. In no case was there any untoward result. A certain number of patients refused further treatment after the first injection, and these cases are not recorded, Middleton says. It must be definitely recognized that in using this method of treatment there is considerable temporary disturbance and, not unnaturally, perhaps, some patients refuse to be made more uncomfortable, even temporarily. In addition to investigating the local changes, the only observations made were the effects produced on the temperature curve and on the pulse. Headache, sweating, sickness, or diarrhea were noted. The original intention was to try the method only in cases of rheumatoid arthritis, but this was departed from, and certain other conditions were also treated. The condition of the patients was improved by the treatment. In certain early cases the disease was apparently arrested. In late cases a definite amount of relief from pain was obtained.

Japan Medical World, Tokyo

3: 181-206 (Aug. 15) 1923

*Investigation of Pneumonic Plague. M. Tsurumi, T. Hara, M. Imai, T. Awoki and T. Sakamoto.—p. 181.
*Relation of Precipitinogen and Precipitin in Living Body. T. Oguchi.—p. 187.

Pneumonic Plague.—From the facts gathered by the authors in a recent epidemic of plague, the tarbagan seems to have more or less relation thereto. In other words, an outbreak among the tarbagans is considered to precede one among human beings. The outbreak appeared first in the bubonic form; then it passed into plague septicemia, and caused the greatest havoc in the form of the pneumonic plague. Infection is carried from one person to another directly through sputum spray in the air. By way of bacteriologic diagnosis in an early stage, a lung lancing should be tried in addition to the examination of the sputum. Among over 2,000 Chinese, who were subjected to a quarantine examination, not a germ carrier was found. The formation of the agglutinin has not been remarkable in the serum of the plague cases. In one instance, the patient's serum on the third day of the appearance of the symptoms prevented hemolysis completely in a 1:5 dilution, and remained of a positive nature up to 1:20. Generally speaking, in a number of the pneumonic types, plague bacilli could be detected in the lungs, heart blood, spleen, etc., although out of thirteen cases, two gave no sign of the presence of the bacilli in the heart blood. In these two cases, the plague bacillus was detected in no viscus other than the lungs. That is to say, the pneumonic plague does not always cause septicemia. Therefore, in a postmortem examination of a pneumonic plague corpse, the material for examination should not be obtained from the heart blood or spleen only. Material obtained from the lungs must be examined. This point is held to be of great importance in the prevention of epidemics.

Relation of Precipitinogen and Precipitin in Vivo.—Oguchi asserts that serum contains many (at least six) different protein bodies of different activity and specificity. Chemically separated albumin and globulin are not single units immunologically. When heterogenous serum is introduced into the living body, globulin is split first and albumin last. The precipitins and precipitinogens which have mutual affinity do not exist at the same time in the living body. The formation

of a precipitin indicates the complete splitting of the precipitinogen for which it has affinity. The precipitin which reacts with the precipitinogen in the living body only appears after the precipitinogen has disappeared. This phenomenon is seen whether a heterogeneous serum is introduced into the body in large or small amounts injected repeatedly or only once.

Journal of Neurology and Psychopathology, London

4: 103-204 (Aug.) 1923

Viscerocutaneous Anemic Zones and Their Significance. Th.B. Wernoe. —p. 103.
Nervous Child. R. G. Gordon.—p. 125.
Rôle of Trauma in Etiology of Organic and Functional Nervous Disease. S. A. K. Wilson.—p. 133.
Case of Unilateral Bulbar Lesion Probably Syringobulbia, with Special Reference to Sensory Pathways within Medulla. W. G. Willie.—p. 148.
*Etiology of Argyll-Robertson Pupil. F. J. Nattrass.—p. 162.

Etiology of Argyll Robertson Pupil.—A case is described by Nattrass of gunshot wound of the head in which a fragment of shrapnel traversed the upper part of the mesencephalon. The injury resulted in bilateral Argyll Robertson pupil and defect in conjugate upward movement of the eyes. In addition, it produced right hemitremor, involving the face, arm and leg. The Wassermann reaction of the blood was negative, and there was no further evidence of nervous syphilis.

Journal of Pathology and Bacteriology, Edinburgh

26: 305-432 (July) 1923

Cultivation of Anaerobes in Autodigest of Pancreas. F. P. G. de Smidt. —p. 305.
Catalase in Bacteria and Its Relation to Anaerobiosis. A. B. Callow. —p. 320.
Catalase Production and Sensitiveness to Hydrogen Peroxid Among Bacteria: with Scheme of Classification Based on These Properties. J. W. M'Leod and J. Gordon.—p. 326.
Problem of Intolerance of Oxygen by Anaerobic Bacteria. J. W. M'Leod and J. Gordon.—p. 332.
*Certain Granules of Nucleolar Origin Found in Cells of Malignant Neoplasms During Mitosis. H. A. Haig.—p. 344.
*Complement Fixation Test in Tuberculosis. B. L. Coulthard.—p. 350.
*Glands of Internal Secretion in Experimental Avian Beriberi. V. Korenchevsky.—p. 382.
*Influence of Mother's Diet During Pregnancy and Lactation on Growth, General Nourishment and Skeleton of Young Rats. V. Korenchevsky and M. Carr.—p. 389.
Heteromorphoses (Metaplasia) of Alimentary Tract. G. W. Nicholson. —p. 399.
Titration of Complement in Wassermann Reaction. F. C. Lewis.—p. 418.
Bordet's Extract in Wassermann Reaction. H. D. Wright.—p. 420.

Granules of Nucleolar Origin in Tumor Cells.—Tumors of various kinds removed at operation were studied by Haig. He discovered an abnormality in mitosis in cells of carcinoma and sarcoma, which, he believes, although not necessarily a constant feature, tends to show that the nucleoli are probably of little use in mitosis in such tumors. Nucleolar extrusions have been observed in certain protozoa and vegetable cells, but the significance of such extrusions is not at all clear. With regard to the histologic differentiation between benign and malignant tumors, it is possible that at times, especially when some doubt exists as to diagnosis, the occurrence of these nucleolar fragments in the cytoplasm of cells showing mitotic figures might be a cytologic feature of diagnostic value.

Complement Fixation Test in Tuberculosis.—A comparison is made by Coulthard of the value of various antigens employed with a view to demonstrating fixation of complement with the serums of persons infected with tuberculosis. The antigens tested include those which contain the whole bacilli and also "fractions" prepared by various methods. By testing the actual amount of complement which is fixed by mixtures of antigen and tuberculous serum, it has been found that suspensions of killed tubercle bacilli in saline solution are reliable, stable and sensitive antigens; in general, they give the most marked reactions. Next in value comes the alcoholic extract obtained from cultures of tubercle bacilli which have been previously treated with acetone. With this lipoid antigen often stronger complement fixation is obtained than with suspensions of bacilli in saline solution; but certain tuberculous serums, which show a reaction with the latter, fail to fix complement in the presence of the lipoid extract. The occurrence of the reaction with antigens prepared from human and bovine types of tubercle bacilli has been compared, and also the group reaction with other acid-fast organisms has been studied. The reaction with tuberculous serum and tubercle bacillus antigens has been found to be independent of the Wassermann reaction and of the presence in the serum of any heterophil antibody. Apparently it is a highly specific reaction.

Glands of Internal Secretion in Beriberi.—The most characteristic changes found by Korenchevsky in the glands of internal secretion of pigeons suffering from beriberi were: (*a*) hypertrophy of the suprarenals; (*b*) atrophy of the thymus; (*c*) atrophy of the spleen with persistence of the islets of the germ centers, often accompanied by an increase in their number and size and frequent hypertrophy and hyperplasia of the islet cells.

Influence of Mother's Diet on Offspring.—Korenchevsky and Carr found in rats that when the mother is fed during pregnancy or lactation on a diet deficient in fat soluble vitamin or calcium, there is a marked increase in the disorders of general nutrition with rachitic changes in the skeleton of the offspring that are kept after weaning on a diet deficient in similar factors. On the other hand, on a diet rich in fat soluble factor and calcium there is a marked decrease in the disorders of general nutrition and rachitic changes in the skeleton of the offspring kept on a minus vitamin A diet, even when the mother was also kept on the same insufficient diet during lactation. Feeding the mother during lactation on a diet rich in fat soluble factor and calcium hinders, for a considerable time, the disorganization of general nutrition and the development of obvious rickets in the offspring kept on a diet deficient in fat soluble vitamin. These experimental data point to the possibility of influencing the occurrence of rickets and general disorders of nutrition in the offspring through the diet of the mother.

Journal of Tropical Medicine and Hygiene, London

26: 261-272 (Aug. 15) 1923

Malaria of Middelvelt and Highveld of Transvaal. H. A. Spencer.—p. 261.
*Possible Presence of Paragonimiasis Among Indians in Natal. F. G. Cawston.—p. 263.
Hot Weather and Some of Its Effects. J. Cantlie.—p. 265.

Paragonimiasis in Natal.—Cawston has been greatly impressed with the large number of Indians suffering from chronic coughs at the Natal Coast, and the vast number of fresh-water snails to be found in the water-cress beds of Durban. Nothing is done to prevent the breeding of these pests, which constitute a real danger to the health of the community in Durban as well as to those Indians who are continually wading among the water-cress and gathering it into bunches for human consumption. Styletted cercariae have been isolated from three distinct species of fresh-water snails obtained in these water-cress beds; some of them are encysting forms which shows that they are able to resist the effects of drying when collected for the market. The vast majority of the fresh-water snails in this locality are examples of *Melanoides tuberculata*, and a very large proportion are infested with styletted cercariae. This species has been shown to act as one intermediary host for *Paragonimus westermanni*.

Medical Journal of Australia, Sydney

2: 109-134 (Aug. 4) 1923

Treatment of Diabetes. A. E. Mills.—p. 113.
*Tetanus. G. Bell.—p. 120.

Serotherapy of Tetanus.—Two cases are reported by Bell to emphasize the value of early and intensive treatment by means of concentrated antitetanic serum, administered by the intratheeal and intravenous routes. In one case, the total amount of antitetanic serum given intravenously, intrathecally and intramuscularly was 250,000 units. In the second case, the total number of units of tetanus antitoxin injected was 298,500.

Annales de Médecine, Paris

14: 89-172 (Aug.) 1923

*Spinal Cord in Infantile Poliomyelitis. Bouttier and van Bogaert.—p. 89.
*Myocarditis with Endocarditis. E. Lenoble.—p. 108.
*Hemophilia. K. Hynek.—p. 122.
*Sarcoma of the Midbrain. Sakorrafos.—p. 155.
*Allergy in Tuberculosis and Syphilis. Dujardin and Duprez.—p. 161.
*Induced Diuresis in Orthostatic Albuminuria. Labbé and Violle.—p. 168.

Spinal Cord Cells in Relation to Muscle Function.—Bouttier has in press a study of seven normal spinal cords, and he now supplements this with a similar clinical and anatomic study of the cytoarchitectonics of the cord in a case of infantile poliomyelitis in a boy, aged 15. The acute phase began at the age of 10, and for two years the boy was unable to move arms or legs or to sit up. Then he began to improve somewhat, notwithstanding the uniformly distributed destruction of the motor cells in the anterior horns. The lateral column of sympathetic cells was intact throughout, and the muscles of the trunk were comparatively normal. Bouttier queries whether the spinal sympathetic system might not have been responsible for the partial resumption of motor function.

Rhythm Variations in Infectious Endocarditis.—Lenoble refers to protracted endocarditis, and calls attention to the importance of the share of the associated infectious myocarditis in the clinical picture. He compares the clinical, graphic and necropsy findings in five cases. The myocardium is almost invariably involved, and this myocarditis is responsible for the arrhythmias of all kinds observed, and for the suddenness of the death, which is the rule. The pericardium alone escapes.

Test for Hemophilia, and Effective Treatment.—Hynek explains hemophilia as the result of an excess of antithrombin in the blood. The production of antithrombin, he says, is controlled by the internal secretion of the sex glands. This explains its sex-linked transmission, and the benefit from treatment by extract of corpus luteum. He describes a method of estimating the firmness of the blood clot, saying that hemophilic blood displays the least and the blood of pregnant women the greatest degree of resistance—the two extremes of the scale. He remarks parenthetically that this offers another possible test for detecting pregnancy, the firmness of the clot being ten times and more that of normal blood. The seven cases of hemophilia described include three sets of two brothers; the hemophilia was clinically cured under corpus luteum extract treatment. The various theories as to the nature of hemophilia are analyzed, and their fallacies pointed out. The firmness of the clot is tested by drawing venous blood into the central part of a capillary tube, 10 cm. long, and placing thirty or forty such tubes horizontally in the moist chamber. The blood is then blown out from one tube at five minute intervals with compressed air, the pressure required to expel the clot being recorded with the tonometer by substituting the tube in the place of the cuff. With normal blood, the first sign of resistance of the clot becomes evident in ten or fifteen minutes, and it reaches its height in twenty or thirty minutes. In a typical case of hemophilia, the first signs appeared in two and a half hours, and the pressure was 10 mm. water by the third hour. The coagulating time was over sixteen hours; the bleeding time nearly six hours. Under corpus luteum extract treatment, the resistance of the clot became permanently very nearly normal. The maximum resistance of 33 mm. of water was attained in fifty-five minutes, and then dropped rapidly. By this resistance test, hemophilia can be differentiated by the blood in vitro. There are no characteristic morphologic findings; the number of blood platelets is rather above than below normal.

Sarcoma in Brain.—Sakorrafos observed the complete clinical picture of epidemic encephalitis in a man, aged 57: somnolence, ptosis and diplopia, with occasional fever. The man died within a month, and necropsy revealed a sarcoma in the midbrain. Even the findings in the cerebrospinal fluid had apparently confirmed the diagnosis of epidemic encephalitis. The only symptom that did not belong to the picture of this disease was the bradycardia of 60.

Nonspecific Allergy in Tuberculosis and Syphilis.—Dujardin and Duprez present evidence to demonstrate that a chronic infection, such as tuberculosis or syphilis, may induce hypersensitivity not only to the causal agent or its toxins, but also to certain other substances. Syphilitics may respond even more vigorously than the tuberculous to intradermal tuberculin tests, and both the syphilitic and the tuberculous may react equally vigorously to intradermal tests with diluted milk. This interdependence of allergies seems to open a new therapeutic horizon, they say. The milk test may induce recrudescence of syphilitic meningeal reactions, and this recalls the utilization of tuberculin in treatment of general paralysis, although based on other premises.

Induced Diuresis in Orthostatic Albuminuria.—Labbé and Violle applied the water freshet test to a youth, aged 15, with 0.45 gm. albumin but no casts or leukocytes in the urine when examined after long standing. There was no albumin in the night urine. He drank while fasting 200 c.c. of water every half hour for two hours, urinating every half hour for three hours. The output of urine was normal when he spent the day of the test in bed, but when he was up and about during the three hours of the test he voided only half the normal amount.

Archives des Maladies de l'App. Digestif, Paris

13: 409-520 (May) 1923

*Functional Achylia Gastrica. C. Bonorino Udaondo.—p. 409.
Secretory Activity of the Digestive Tract. T. I. Bennett and E. C. Dodds.—p. 422.
Anomalies in Shape and Position of Duodenum. Radiologic Studies. Delherm and Morel-Kahn.—p. 458.

Achylia Gastrica.—Bonorino Udaondo says that modern studies of achylia gastrica tend to modify belief in the organic character of the anomalies of secretion. Achylia has been found in different members of the same family, he says, and often in children under 10 years of age; also in children born of parents suffering from pernicious anemia. Functional achylia is frequently accompanied by congenital anomalies, such as dental deficiencies, geographic tongue, arterial hypotension, bradycardia and, on the part of the digestive apparatus, chronic constipation and hernia; urinary symptoms are oxaluria, phosphaturia and sometimes albuminuria. The differential diagnosis between organic and functional achylia is not always easy. The past history is of great importance as it permits the exclusion of many determining factors of gastritis, and the study of the evolution of the symptomatology. Another difficulty is the separation of constitutional from acquired forms in the inorganic type. The author places all cases in the constitutional category when the past history reveals either hereditary tendencies or early appearance of symptoms. Nineteen cases are discussed, eleven being constitutional and eight acquired. A glandular lesion was sought carefully in each case and all causes that produce gastritis were excluded; only when the examination was negative was the functional nature of the process admitted. Among the cases of tabes with gastric crises studied, in two the chemistry varied considerably during the transition from the period of calm to that of the visceral pain. During the painless intervals the secretion was normal, while during the pain crisis total achylia was established—temporarily however, the former acidity returning as soon as the attack passed.

Archives de Médecine des Enfants, Paris

26: 457-520 (Aug.) 1923

*Pneumatocele of Larynx. J. Guerra-Estapé and L. Suñé-Medán.—p. 457.
*Bronchopneumonia in Children. M. D'Oelsnitz and L. Colle.—p. 468.
*Open Fontanel as Aid in Diagnosis. M. Erlich.—p. 499.
Diabetes Insipidus and Pituitary Treatment. Secrétan.—p. 502.
Principles for Antitoxin Treatment of Diphtheria. J. Comby.—p. 506.

Pneumatocele of the Larynx.—The boy, aged 6, had a laryngocele on each side. They were first noted after severe whooping cough at the age of 4. Only thirty-six cases of pneumatocele of the larynx have been published in a century, according to these writers' compilation. One case in an infant, aged 16 days, demonstrates the congenital origin although the laryngocele may not become manifest till late in life.

Treatment of Pneumonia in Children.—Thirty cases of pneumonia are published, in detail, under treatment with vaccine and serotherapy. The results were decidedly more

favorable than with other treatment in previous years. All children over 2 years of age recovered. Serotherapy alone gave good results, but vaccine therapy alone did not. The serotherapy should be begun as early as possible and its intensity should be proportional to the gravity of the case. Vaccine therapy should be milder with the more extensive lesions, and when the leukocytic reaction is more pronounced. Vaccine therapy should be pushed, on the other hand, in torpid and protracted cases with poor leukocytic reaction.

Bulging of the Fontanel.—Erlich regards tenderness on pressure over the fontanel as a sign of meningeal irritation that is as instructive as tenderness of the mastoid process in otitis media. She has noticed that children born with a small fontanel showed average mental development. Small fontanels close earlier than large ones.

Paris Médical

23:41-56 (July 14) 1923

Secondary Cataract. F. Terrien.—p. 41.
Heliotherapy in Bone and Joint Tuberculosis. C. Roederer.—p. 43.
Fugues, Epilepsy and Alcoholism. R. Targowla and B. Reverchon.—p. 46.
Acquired Chronic Trophic Edema. A. Henry.—p. 49.
*Complete Arrhythmia. E. Donzelot.—p. 53.

Paroxysmal Complete Arrhythmia.—Donzelot believes that the paroxysmal form of complete arrhythmia is by no means as rare as the profession is led to believe. Its diagnosis is relatively simple and it is easily influenced by proper treatment. Paralysis of the pneumogastric lengthens the refractory phase of the heart cycle, and atropin and belladonna may be indicated to combat the fibrillation, though quinidin is proving superior. When the auricular fibrillation tends to spontaneous arrest, quinidin is the medicament of choice. The satisfactory results obtained by its use have generally been realized, the author believes, in cases in which the paroxysmal character of the complete arrhythmia has not been recognized by reason of the long duration of the attack.

23:93-116 (Aug. 4) 1923

Urology in 1923. R. Dossot.—p. 93.
*Influence of Bismuth on the Kidney. Rathery and Richard.—p. 101.
Hemorrhages of Nephrotomy. B. Fey.—p. 106.
Urco-Secretory Constant. H. Chabanier et al.—p. 110.

Bismuth and the Kidney.—Facts concerning the effect of bismuth preparations on the kidney have been, according to Rathery and Richard, in process of collection since 1829, when Kerner reported the first case of death with anuria following the ingestion of 8 gm. of bismuth subnitrate. The authors give a detailed report of their experimental research on dogs. Injections of insoluble bismuth preparations did not appear to provoke acute nephritis in dogs, even when the injections were of large doses and when the kidney had been previously affected. In human subjects, no serious effects were noted in any case, in spite of the fact that several patients examined presented defective renal function before the administration of the drug. Their experiments established the fact that certain individuals have a peculiar susceptibility to bismuth, making its use in such cases inadvisable.

Presse Médicale, Paris

31:705-716 (Aug. 15) 1923

*Radiotherapy in Gynecology. Recasens.—p. 705.
*Autohemotherapy. F. Moutier and J. Rachet.—p. 708.
*Factors Causing Cancer. L. Loeb.—p. 709.

The New Applications of Radiotherapy in Gynecology.—Recasens uses both roentgen and radium rays in treatment of uterine cancer, but is careful to give the complete dose in a short time, as it is impossible to estimate the sensitivity of tissues that have been irradiated weeks or months before. Nearly all roentgen burns occurred in tissues that had been exposed long before the exposure causing the injury. The interval between exposures should never be over twenty-six hours at most. He says that ordinary metrorrhagia and myoma can always be cured by radiotherapy, but the rays must be applied immediately after the close of the menstrual period, before hormones can form which otherwise would induce the menstrual hemorrhage. Metrorrhagia at the menopause also yields inevitably to roentgenotherapy, but cancer must be excluded as the dose that cures the metrorrhagia only speeds up malignant disease. Roentgen-ray treatment often cures tuberculous peritonitis after the effusion has been evacuated. The dose should be 65 per cent. of the skin dose; the intestines do not suffer with a dose less than 100 per cent., but temporary castration follows. This is an advantage under the circumstances. He says that it is a good plan to suspend menstruation temporarily by roentgen exposures in any form of tuberculosis, and also with inflammatory processes in the adnexa or heart which have not yet entailed destruction of tissue. He comments further on the advantages of temporary castration by this means when insanity or other disease renders the prospect of normal offspring unlikely. While waiting for recovery from syphilis, the wife might be temporarily sterilized by this means. Recasens adds that amenorrhea yielded to roentgen treatment in ten of his twenty-eight cases of the kind. No benefit was observed when the amenorrhea was of several years' standing. He gives only 15 per cent. of the skin dose when the purpose is to cure amenorrhea. Supplementary exposure of the pituitary is logical. In one of the ten cases in which menstruation returned after one or two exposures at a month's interval, a normal pregnancy followed, now in the fifth month. In a case of hypothyroidism with internal hemorrhages, puffiness of the face, edema and mental torpor, roentgen exposures of the front of the neck, at a month's interval, were followed by complete recovery.

Autohemotherapy.—Moutier and Rachet say that they have had no serious by-effects in 400 injections of the patient's own blood in seventy cases. This autohemotherapy seems to be a kind of desensitization, but it sometimes acts by inducing an attack of the anaphylaxis to combat which the radiotherapy is being applied. An emotional shock was observed in three cases, but it occurred before blood had been injected. In two other cases, symptoms of serum sickness developed three or four days after the injection. In three cases, the injection induced a new attack of the anaphylactic eczema, urticaria or migraine, or aggravated an existing attack. None of the above disturbances were severe enough to alarm the physician. From 2 to 20 c.c. of blood is drawn from the vein in the bend of the elbow and reinjected immediately into the gluteal muscle, not allowing time for it to clot. The amount varies with the pathologic condition being treated.

Interrelations of Factors Causing Cancer.—Loeb's research on the inheritance of cancer in mice and on the clinical incidence of cancer in man has confirmed the assumption of a quantitative and time relation between the factors that are responsible for cancer, and the rapidity and frequency of the malignant transformation.

31:717-724 (Aug. 18) 1923

Fracture of Forearm Bones. C. Lenormant and J. Senèque.—p. 717.
Treatment of Eclampsia. L. Cheinisse.—p. 720.

31:725-732 (Aug. 22) 1923

*The Pelvic Reflex. F. Jayle.—p. 725.

The Pelvic Reflex.—Jayle analyzes the characteristic reflex responses to irritation of the nerves in the posterior cervix and Douglas pouch, in the course of vaginal hysterectomy or coitus. The sensibility of the innervation in this region varies in different persons and at different times. When pronounced, it may affect reflexly any one or more of a number of organs. This is the explanation of the deep inspiratory groan during hysterectomy, the "uterus cough" and the aphonia or vomiting with flexion of the uterus and early in pregnancy. Albertin's *cri du Douglas* may be induced by pressure on the pouch of Douglas.

Pediatria, Naples

31:633-688 (June 15) 1923

*Infantile Leishmaniasis. R. Jemma.—p. 633.
*The Blood in Nutritional Disorders. F. de Angelis.—p. 641.
*Vaccine Therapy in Acute Osteomyelitis. S. Grisanti.—p. 649.
Treatment of Pertussis. G. Matarese.—p. 672.

Diagnosis and Treatment of Kala-Azar in Children.—Jemma recalls that the Naples and Palermo pediatric clinics have aided materially in the solution of almost all the problems connected with this disease. He says that the specific

action of tartar emetic by the vein is now fully established. He begins with 0.3 or 0.4 gm. for children under 3, with 0.4 or 0.5 gm. for older children, repeating the intravenous injection twice a week for two or three months or longer. The children are treated as outpatients. He never observed malaria and Leishman parasites associated. The diagnosis may not be certain until the Leishman bodies are found on puncture of the bone marrow or spleen pulp. The disease affects infants predominantly, and is rare after the age of 4. The number of cases in the last two years is larger than the number in the preceding five years. The problem now pressing for solution is the mode of transmission of infantile leishmaniasis.

The Changes in the Blood in Nutritional Disorder in Infants.—De Angelis tabulates the differential blood count in 9 infants with chronic dyspepsia and dystrophy, 10 with acute dyspepsia, 8 with decomposition, 9 with dystrophy alone, and 14 with toxicosis. They show the remarkable promptness and intensity with which the blood reflects any upset in the nutritional balance.

Vaccine Therapy in Acute Osteomyelitis in Children.—Grisanti concludes from the twelve cases described that vaccine therapy not only hastens repair after operative treatment of the osteomyelitic focus, but also tones up the general health. The main thing is to begin the vaccine treatment early and continue with large doses over a sufficient length of time.

Rivista Critica di Clinica Medica, Florence

24: 193-208 (May 5) 1923

*Syphilitic Disease of Liver. F. D'Arbela.—p. 193. Conc'n.
Percussion in Diagnosis of Pneumothorax. E. Riccioli.—p. 202.

24: 209-224 (May 15) 1923

Senile Changes in the Blood Picture. L. Puccioni.—p. 209.

24: 225-240 (May 25) 1923

The Vegetative Nervous System in Epidemic Encephalitis. D. Campanacci.—p. 225.

24: 241-256 (June 5) 1923

Diagnostic Import of Regional Skin Reaction. De Battisti.—p. 241.
Hydrochloric Acid Test of Pancreas Function. F. D'Arbela.—p. 248.

Syphilitic Disease of the Liver.—D'Arbela's four cases illustrate the remarkable variety of the clinical pictures that may be presented by syphilis of the liver. In one woman, continuous fever with daily remissions and intense prostration, jaundice, ascites and signs of partial obstruction of the bile duct prevented a diagnosis at first, although the free effusion and the enlargement of the spleen and liver might have suggested cirrhosis of the liver. In this case headache, worse at night, had been noted for nearly two years. In the second case the symptoms were all digestive except that the abdomen enlarged until advanced pregnancy was assumed. Complete recovery followed tapping and forty mercurial inunctions. The diagnosis in the third case had been in turn Malta fever, malaria, tuberculosis and angiocholitis during the four years of symptoms, but a clinical cure was realized at last with mercury. In the fourth case, an eruption accompanied the digestive and liver disturbances, and they all yielded to prompt mercurial treatment.

Brazil-Medico, Rio de Janeiro

1: 313-324 (June 9) 1923

Bacillary Dysentery at Rio. Gomes de Faria and Genesio Pacheco.—p. 313.
Modern Treatment of Leprosy. Orozimbo Corrêa Netto.—p. 315.

1: 325-336 (June 16) 1923

*Production of Antiserums in Large Animals. R. Kraus.—p. 325.
*Serotherapy of Cobra Bites in Brazil. R. Kraus.—p. 326.
*Acute Anterior Poliomyelitis in Adult. W. Berardinelli.—p. 328.

Production of Antitoxins in Large Animals.—Kraus states that the antitoxin for diphtheria is found regularly in the blood serum of older horses, and the antiserum for tetanus regularly in the blood of the older beeves. By using these older animals, the antiserums are produced more rapidly and in larger amounts, with greater potency, than with other technics. Beef serum rarely entails serum sickness.

Snake Bites in Brazil.—Kraus tabulates the details of 1,959 cases of snake bites reported to the Instituto de Butantan since 1902. Eleven different varieties of snakes were incriminated. In 318 the snake species was unknown. The deaths totaled 9.8 per cent. of the 295 bites by crotalus, 1.4 per cent. of the 211 by *Lachesis alternata* and 3.1 per cent. of the 318 in which the species of the snake was unknown; the mortality was only 0.6 per cent. in the 738 *Lachesis jararaca* cases and 1.2 per cent. in the *Lachesis jararacussu* cases. There was no fatality with other species, the total being thus 2.5 per cent. in 1,959 cases. In the last two years the 236 human cases had a mortality between 4.1 and 4.3 per cent.; in the thirty-nine animals it ranged from 5 to 10 per cent. Of the 1,959 patients given the antivenin in twenty years, 2.5 per cent. died, and 11.3 per cent. of the 344 animals bitten.

Acute Anterior Poliomyelitis in Adult.—Among the other symptoms in the young man, there were flaccid paralysis of both hands and one leg, and cephaloplegia. Berardinelli ascribes the polyneuritis to acute poliomyelitis, the young man having had a febrile attack five months before.

Deutsche medizinische Wochenschrift, Berlin

49: 937-970 (July 20) 1923

*Insulin in Treatment of Diabetes. A. Biedl.—p. 937.
Anatomic Basis for Nervous and Mental Disease. H. Dürck.—p. 941. Cont'n.
Neurectomy in Pulmonary Tuberculosis. G. Sultan.—p. 944.
Operations on Heart Nerves in Angina Pectoris. F. Brüning.—p. 945.
Relations Between Skin and Immunity. H. Martenstein and B. Schapiro.—p. 947.
Hemoglobinometer. H. Hirschfeld and Apel.—p. 949.
Anaphylaxis from Eating Horse Meat. J. Carl.—p. 952.
Pessary for Contraception. Pust.—p. 952.
Boric Acid in Treatment of Pyocyaneus Infection. A. Passow.—p. 953.
*Hemoglobin Preparation as Tonic and Food. E. Grahe.—p. 954.
*Some Dermatologic Problems. O. Grütz.—p. 955.
The Discussion at the Readings of the Antivenereal Disease Bill. Roeschmann.—p. 956.
Arrangements for Administration of Social Insurance in the Netherlands. Prinzing.—p. 957.

The Theory of Pancreatic Diabetes.—Biedl remarks that the action of insulin throws light on the nature of the disturbances in diabetes. It also seems to confirm his previous assertions that the internal secretion of the pancreas is conveyed to the blood by way of the lymph. In dogs, by diverting the lymph through a fistula after ligating the thoracic duct, experimental diabetes is induced. The lymph from the thoracic duct behaves exactly like insulin in tests on animals, and in therapeutic experience. "It is evident that the duct lymph contains the internal secretion of the pancreas, the same as insulin, only in lesser amounts, but we get it thus fresh and still warm, directly from the pancreas' kitchen." Insulin seems to have also confirmed the theory that the hyperglycemia in diabetes is the result of overproduction of sugar. Insulin checks this pathologic unlimited production of sugar. At first sight, insulin seems to sustain rather the opposite assumption, that the hyperglycemia is due to reduction in the power to assimilate the sugar, rather than overproduction.

Hemoglobin Tonic.—Grahe mixes lactose with washed red corpuscles from horse blood. Dried and pulverized, this forms, he asserts, an agreeable, durable and effective tonic.

Some Dermatologic Problems.—Grütz discusses Friboes' revolutionary views on the embryonal origin of the epidermis, and Bloch's contention that the pigment in the skin is formed by an oxidizing ferment action. Bloch found that dioxyphenylalanin applied to the skin induces a peculiar melanin formation in the basal cells of the epidermis. Another topic now under discussion is Meirowsky's suggestion that pigmented nevi are a throwback to previous stages of evolution, when the pigmentation formed the markings of some animal.

Deutsche Zeitschrift für Chirurgie, Leipzig

180: 201-418 (July) 1923

*Pathogenesis of Arthritis Deformans. E. Wehner.—p. 201.
*The Mechanics of Gastroscopy. W. Sternberg.—p. 234
*Blocking Absorption of Toxins. Hilgenberg and Thomann.—p. 267.
*Live Wire Accidents. P. Balkhausen and H. A. Grueter.—p. 273.
Pathogenesis of Traumatic Epilepsy. W. Bloch.—p. 290.
Isolated Fracture of Spinous Processes. K. Koch.—p. 339.
Echinococcus Disease in Man. J. Palugyay.—p. 356.
Stenosis of Lower Duodenum. A. Beck.—p. 389.
Tearing Off Fracture of Spinous Processes. E. Goetzl.—p. 396.

Suppuration in Interstitial Hernial Sac. E. Eggers.—p. 401.
Granulation Tumor on Roentgen Burn. G. Brandt.—p. 405.
Gastric Myoma. W. Smital.—p. 410.

Pathogenesis of Arthritis Deformans.—Wehner presents an experimental and histologic study of abnormal mechanical wear and tear on the ends of the bones forming a joint.

Gastroscopy.—Sternberg's profusely illustrated article is entitled "New Points of View from Mechanics for Study of the Mechanics of the Stomach and the Mechanics of a New Gastroscope of a Special Type." A separate instrument is required for the pylorus antrum, the lesser curvature and the fundus, and those constructed on his principles can be introduced easily and harmlessly, he says.

Blocking Absorption of Toxins by Ring of Injected Blood.—Läwen has been successful by this means in treating carbuncles and malignant furuncles. He injects the patient's own blood all around the carbuncle, hoping thus to attenuate the virulence of the causal agents and block absorption of toxins. Hilgenberg and Thomann, assistants in his service, here describe experiments on rats and mice which have confirmed the effectual blocking of injected strychnin by this encircling wall of injected blood, human blood serum, acacia solution, Ringer's solution, distilled water, diphtheria antitoxin or a silver salt. Cocain could be thus walled in by some of these substances but not by all, and curare only by defibrinated human blood, blood serum and acacia. Ringer's solution and distilled water seemed to hasten the fatal action of the curare. The blocking is as certain in its action as an Esmarch band, or at least as a Bier constricting band. This effect was confirmed by clinical experiences. For example, extensive edema of the lids from a furuncle on the cheek subsided after the injection of the blood more promptly than would have been expected from the incision of the furuncle alone. The purely mechanical blocking is supplemented, they think, by a kind of protein therapy from the injected blood. This has been amply demonstrated in veterinary medicine in the last few years, with injections of own blood and mother's blood.

Electric Accidents.—Balkhausen and Grueter comment on the comparative mildness of the changes found in the organs after a fatal accident from a live wire. Examination of an arm that had to be amputated, on account of gangrene from an electric burn, showed that extreme contraction and paralysis are special features of the action of the current on muscles and muscle nerves, and on the vessels and their nerves.

Klinische Wochenschrift, Berlin

2: 1341-1388 (July 16) 1923

*Anatomy of the Capillaries. U. Ebbecke.—p. 1341.
*Hormones and Cations. H. Zondek and T. Reiter.—p. 1344.
*Roentgenography of Pancreas Disease. O. Gross.—p. 1346.
*Test for Colloidal Condition of Blood. W. Starlinger.—p. 1354.
*Serodiagnosis of Pancreas Disease. M. Marcus.—p. 1356.
*Needle Electrodes in Electrocardiography. P. G. Böttcher.—p. 1357.
Estimation of Potency of Rays in Phototherapy. F. Blumenthal and Finkenrath.—p. 1358.
*The Sippy Treatment of Ulcer. A. Orlianski.—p. 1359.
*Serum Treatment Before Grafts. K. Laqua.—p. 1360.
Electric Burns of the Skin. C. W. G. Mierement.—p. 1362.
*Seroreaction in Cancer Cases. H. Kahn.—p. 1364.
"The Auricular Symptom in Meningitis." E. Goldberg.—p. 1365.
"Rachitis in Large Cities." Hilgers.—p. 1365. Reply. Engel.—p. 1366.
Carbohydrate and Creatin Metabolism in Experimental Scurvy. A. Palladin.—p. 1366.
Ninhydrin Reaction of Eosinophil Granula. Klewitz and Krieger.—p. 1366.
Changes in Mucosa under Action of Tar. Buschke and Langer.—p. 1367.
Case of Buhl's Disease. W. Vogel.—p. 1368.
Fat Content of Organs in the New-Born. Vogel.—p. 1368.
Present Status of Treatment of Psoriasis. K. Herxheimer.—p. 1369.
Detection, Treatment and Prevention of Tuberculosis in Children. H. Langer.—p. 1371.

Anatomy of the Capillaries.—Ebbecke ascribes the contractility of the capillaries to the ameboid and other properties of the endothelial and adventitial cells. He presents arguments to sustain this view, and shows that it explains the various phenomena observed.

Hormones and Cations.—Zondek and Reiter's illustrations of tadpoles treated with various hormones sustain their assertion that the hormones alone are inactive. They require certain electrolytes before their specific action can occur. They regard the vegetative nervous system as the system regulating the electrolytic factors, and thus maintaining the hormone balance. Disease may be due to the gland producing the hormone or to defective functioning of the regulating system alone. An entirely normal hormone may have a pathogenic action from some change in the electrolytes it encounters.

The Roentgen Rays in Diagnosis of Pancreas Disease.—Gross expatiates on the instructive findings, with or without pneumoperitoneum, in cases of a cyst in the pancreas. When casein in the stool (carmin beefsteak) shows no signs of digestion in seventy-two hours, organic disease of the pancreas is beyond question. Several cases are illustrated. The disturbances had long been from the stomach in one case until slight symptoms of diabetes attracted attention to the pancreas, and the casein test confirmed the pancreatic deficit. The roentgenogram showed two filling defects in the upper duodenum, both extremely tender. These he accepts as ulcer destructive lesions, and he assumes that the secondary irritation of the pancreas explains all the symptoms on the part of the pancreas. In one of the cases described, a traumatic pseudocyst was successfully removed.

Test of Colloidal Conditions in Blood Plasm.—Starlinger presents a simple clinical method for testing the stability of the three albumin fractions in the blood plasma. They are precipitated in turn by varying amounts of a saturated solution of ammonium sulphate. The physicochemical structure of the blood plasma albumin determines the speed of sedimentation of the erythrocytes, and may have differential import in various conditions.

Serodiagnosis of Acute Pancreas Disease.—Marcus reports a case in which the surface tension of the blood serum was materially modified in the way that is characteristic of pancreas disease. The symptoms had been interpreted as perforation of the gallbladder, but the operation disclosed only infarction of the pancreas, confirmed by necropsy soon after. Pancreas lipase is resistant to atoxyl which destroys the lipase in the blood in health, and also in disease elsewhere than in the pancreas. The serodiagnostic test was applied with 2 mg. of atoxyl and a tributyrin solution. In a normal man, the number of drops remained 126 and 127, tested at five ten minute intervals. In the case of pancreas apoplexy, the number fell progressively from 129 to 113.

Needle Electrodes in Electrocardiography.—Böttcher's tracings show the remarkable exaggeration of the peaks and valleys of the electrocardiogram when the needle electrode was introduced intracutaneously. Qualitatively, the tracings were always the same as with the ordinary technic, but the absence of the great resistance opposed by the skin allows more extensive excursions of the tracing needle.

Sippy Treatment of Gastric and Duodenal Ulcer.—Orlianski says that the Sippy treatment failed completely in five of his cases but was brilliantly successful in twenty-three others. He says that it may have to be kept up for several months or a year, but it should always be given a trial before referring the patient to the surgeon.

Preliminary Treatment Before Skin Grafting.—Laqua treated twelve rats with serum from a horse, rabbit, dog, sheep or guinea-pig or with human serum. Then he grafted a patch of skin from an untreated rat. No effect from the serum treatment was apparent.

Serodiagnostic Test for Cancer.—Kahn describes a flocculation and turbidity test with sodium oleate and glycerin that gave positive findings in the cancer cases tested, but in no other conditions except far advanced tuberculosis or other grave febrile disease. The test has the drawback of all hemolysis and stalagmometer tests, but it has all their advantages, and the further advantage that it is easy and simple and requires no special apparatus.

Medizinische Klinik, Berlin

19: 745-780 (June 3) 1923

*The Marriage Question in Venereal Disease. L. Waelsch.—p. 748.
*Differential Diagnosis of Osteomyelitis. G. Rosenberg.—p. 749.
*Resection of Condyle. Kehl.—p. 752.
Treatment of Uterine Cancer. J. Pugs.—p. 753.
Postoperative Tetany. R. Rosenfeld.—p. 755.

Lesions in Mouth from Bismuth Treatment. Boelsen.—p. 757. Cont'd.
*Statistical Study of Heart Disease. B. Finkelstein.—p. 759.
Anesthesia for Tonsillectomy. Birkholz.—p. 761.
*Tubercle Bacilli in Sputum. K. Lemmens.—p. 764.
*Importance of Vital Staining in Research on the Protoplasm. A. Nagorny and B. Schasillo.—p. 764.
Indications for Pessaries. F. Runge.—p. 765.
Recent Works on Internal Medicine. F. Bruck.—p. 766.

The Marriage Question with Venereal Disease.—Waelsch says that all the physician can do is to make marriage as free from danger as possible. We are unable to guarantee that there is no danger, and this fact alone is enough to denounce any legislation requiring a compulsory health certificate before marriage. The question of *impotentia generandi* is easily settled by microscopic examination of fresh semen, and lurking gonococci can be forced out by stretching the urethra with a Kollmann dilator and instilling 2 c.c. of a 0.5 or 1 per cent. solution of silver nitrate, or rinsing with a 1:4,000 solution two or three times at intervals of six or seven days. Intravenous injection of a gonococcus vaccine may succeed when all other provocative measures fail, but negative findings are not decisive. He insists on at least ten microscopic examinations of the secretion at different times after various provocative measures. He declines to interfere when the man comes to him for consent to marry when the interval before the wedding is only a week or two. He requires two or three months when there are still traces of gonorrhea. In examining the prostatic secretion, he advises bacteriologic tests on suitable culture media. With a woman, energetic treatment and observation for several months must precede the permission to marry. With syphilis, he insists on a delay of three years after infection even when the abortive treatment was apparently promptly successful. In cases in which symptoms developed notwithstanding treatment, but the fourth year has been free from any signs of the disease, he consents to marriage in the fifth year, but prefers to wait till the sixth. If the lumbar puncture fluid shows no signs of neurosyphilis after five years, marriage can be allowed even although the Wassermann reaction is still positive in the blood. Patients with uneven pupils and attenuated skin and tendon reflexes, but no typical systemic affection, are hard to estimate. Such cases may never develop further. Lumbar puncture findings are the only guide. He has had four in this category under observation for eighteen to twenty-three years, and their condition has shown no appreciable change, as also a fifth patient with lost knee-jerk, occasional slight lancinating pains, and girdle sensation. This condition has been stationary for fourteen years. He refused his consent to two in this group because they refused to allow lumbar puncture; the findings were normal in another and he gave his permission to marry. The other two did not want to marry. Special attention should be paid to the heart and vessels in examining the candidate for matrimony. All agree that the requirements should be even stricter for syphilitic women than for men. The French postpone consent to marriage for women two years later than the two years they impose on men.

Differential Diagnosis of Osteomyelitis.—In Rosenburg's first case the sudden severe onset with general malaise, involvement of several joints in turn, pain and swelling in both ankles and pains in both knees, with continuous high fever imposed the diagnosis of severe acute articular rheumatism until pus from the foci of staphylomycosis in both legs cleared up the diagnosis. In a second case the diagnosis had been appendicitis with abscess but the abscess in the psoas was traced back to a focus of osteomyelitis in the fifth lumbar vertebra. In Volkmann's compilation of eighty-seven cases of osteomyelitis of vertebrae, the correct diagnosis had been made only in 34 per cent. With children, the local pain is not instructive but polynuclear leukocytosis is enlightening, as also the discovery of bacteria in the blood and the antistaphylolysin reaction, that is, the increased antibody production against the lysin of the staphylococci in the blood. This is not positive till about the eighth to the eleventh day. Negative findings do not exclude infection from some other micro-organisms.

Resection of Posterior Condyle of the Femur.—Läwen's method of horizontal resection is described by Kehl as applied in four cases. It arrests the progress of the disease when it has not encroached beyond the knee.

Endocarditis and Valvular Defects.—Finkelstein found that 2.3 per cent. of the 15,000 patients at the Berlin Charité had some valvular defect, and 66 per cent. in this group had febrile endocarditis. Only 36 per cent. of the fifteen cases of septic endocarditis were in women, but women formed 53 per cent. of the 207 with simple endocarditis. More men died than women from endocarditis (63:37 per cent.).

Enrichment of Tubercle Bacilli in Sputum.—Lemmens' tests failed to confirm any superiority of Korbsch's method over others.

Vital Staining.—Nagorny and Schazillo report that mice bore subcutaneous injection of from 0.05 to 0.083 gm. of dry trypan blue or trypan red per 100 gm. of weight without much influencing the gas interchanges or utilization of oxygen, or affecting the mice injuriously in any way. This method of vital staining is throwing much light not only on the morphologic but also on the dynamic properties of the cells.

Mitteil. a. d. Grenzgeb. d. Med. u. Chir., Jena

36: 151-440, 1923

Acute Pseudodysenterie Colitis. W. Goldschmidt.—p. 151.
Oidium in Relation to Chronic Gastric Ulcer. Kirch and Stahnke.—p. 174.
*Typhoid Cholecystitis. E. Fraenkel.—p. 201.
Influence of Resection of Enlarged Thyroid on Total Metabolism. E. Grafe and E. v. Redwitz.—p. 215.
Diffuse Hemangioma of Rectum. Hennig and Schütt.—p. 235.
Skeletal Changes as Cause of Calcification. F. Schulze.—p. 243.
*Research on the Thyroid. B. Breitner.—p. 265.
*Interrelations of Endocrine Glands. R. Demel et al.—p. 306.
*Physical and Chemical Research on the Thyroid. Starlinger.—p. 334.
Significance of Chvostek's Phenomenon in Postoperative Tetany. S. Jatrou.—p. 356.
Postoperative Temperature after Strumectomy. E. Just.—p. 381.
Iodin Content in Different Types of Goiter. H. Homma.—p. 389.
Research Preliminary to Constitutional-Somatic Characterization of Various Diseases, Especially Goiter. Orator and Pöch.—p. 393.
Shape and Structure of Goiter in Relation to Function. E. Gold and V. Orator.—p. 401.
Evaluation of Drug Functional Tests. V. Orator.—p. 420.

Typhoid Bacilli Carriers.—In discussing typhoid cholecystitis, Fraenkel remarks that cholecystectomy for persistence of typhoid bacilli in the stools is too serious an operation for this purpose alone, in the absence of other symptoms. Even at the best, it does not always answer the purpose, as the bacilli may be lurking in the intrahepatic biliary ducts.

Research on the Thyroid.—This article and those that follow are from Eiselsberg's clinic in Vienna, and are reviewed by Breitner to show that they do not conflict with his theory of goiter. He argues that the colloid of the thyroid is responsible for the functional disturbances, either by abnormal production or by abnormal mobilization and distribution throughout the circulation of blood or lymph. Demel, Jatrou and Wallner removed in turn the ovaries, suprarenals and thymus in white rats, or removed more than one of the glands in the endocrine chain, studying the effect on the thyroid. They found enough changes in the remaining endocrine glands, especially the thyroid, to justify apparently the assumption that the physiologic influence of an endocrine gland depends on a hormone given off into the blood stream or lymph stream, rather than on changes imposed on the blood itself as it passes through the gland.

Starlinger's physical and chemical research on the thyroid showed a higher fibrinogen content in the venous blood than in the arterial blood in cases of supposedly less functionally active thyroids (colloid goiters, adenomatous degenerated goiters, etc.). On the other hand, the fibrinogen content of the venous blood was abnormally low in the more active thyroids, as in exophthalmic goiter or diffuse parenchymatous goiter. He attributes the excess of fibrinogen to the metabolic processes of the thyroid itself (its own waste products). The deficit in fibrinogen he attributes to the functional action of the gland on the colloid albumin of the blood. But it is still a question whether this represents the functional activity of the gland, and therefore is limited to the gland itself, local, or whether it is merely the effect resulting from the action of a specific substance from the gland on its medium of transportation (the colloid albumin of the blood).

Monatsschrift für Geb. und Gynäkologie, Berlin

68: 1-60 (May) 1923

Cyclic Processes in Genital Organs of Female Mammals. E. Hieronymi. —p. 1.
Irradiation of Sex Glands and Its Effect on the Progeny. L. Nürnberger.—p. 7.
*Quinin in Treatment of Febrile Abortion. E. Henrard.—p. 19.
*Interstitial Hematoma in the Ovary. H. Heidler.—p. 25.
Thoracopagus with Infundibulocolic Ligament. T. Gilfrich.—p. 37.

Quinin in Treatment of Febrile Abortion.—Henrard relates that in 92 cases, intensive quinin treatment was followed by spontaneous evacuation of the uterus in 80 per cent. of the cases in which the abortion had already started, and in 50 per cent. of all cases of retention of the placenta. The quinin was administered in three different ways at once (intravenous injection of 2 c.c. of a 25 per cent. solution, and at the same time a similar amount intramuscularly, and two tablets of quinin hydrochlorid, 0.25 gm. each, by the mouth). The quinin failed to induce spontaneous expulsion of placental rests, but it did dilate the os and loosen up the placental fragments, which facilitated their manual removal. If an ergot preparation fails to control the resulting hemorrhage, he advises active intervention before more than 800 or 1,000 c.c. of blood has been lost.

Interstitial Hematoma in the Ovary.—Heidler's case differs from others in the literature in that necropsy revealed a pint of blood in the peritoneal cavity without any evidence as to the source of the extravasation (diapedesis). Removal of the ovary might have lengthened the patient's life if the diagnosis had been possible.

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

86: 221-458 (July 28) 1923

*Vertical Fixation of Fetal Head. E. Weinzierl.—p. 211.
*Organotherapy. B. Zondek.—p. 238.
*Decidual Reaction in Tubes. M. Tranku-Rainer—p. 278.
*The Vaginal Flora. R. Salomon.—p. 295.
*Radiotherapy of Cancer of the Cervix. W. Schmitt.—p. 316.
Acidosis and Normal Pregnancy. O. Bokelmann and J. Rother.—p. 329.
*Narcohypnosis. Hallauer.—p. 359.
*Operative Treatment of Prolapsed Uterus. Mackenrodt.—p. 399.
*Cancer in Area Exposed to Roentgen Rays. Bumm.—p. 445.

Pathologic Vertical Fixation of Fetal Head.—Weinzierl concludes from twenty cases personally observed that this abnormal position of the head is the result of several factors. The Kjelland forceps usually answer the purpose, but cesarean section was necessary after all in some of his cases. A peculiar intensity of the labor pains was noted in several. In some the contractions were weak at first but suddenly became tempestuous.

Experimental Research on Organ Therapy.—Zondek's extensive research on the isolated heart of frogs and on other organs in rabbits, and tests in clinical cases has demonstrated, he says, that effective organotherapy is possible only by feeding desiccated organ tissues or implantation of organ tissue. Organ extracts lose completely the specific endocrine substance during the process of manufacture, especially the process of removing the albumin. The pituitary is an exception. Pituitary extract does not lose its specific action on smooth muscle, but there is no proof to date that this represents an actual specific secretion of the pituitary. By removal and transplantation of endocrine glands and by feeding dried gland tissue, not chemically altered, we will make progress in organotherapy, abandoning the false route we have been traveling, following the ignis fatuus of injection of chemically altered organ extracts. He gives ten tables of metabolic and other findings in his experiments and twenty-nine other illustrations or tracings showing the action on the heart, uterus, small intestine, vessels, blood, coagulation and metabolism in general.

Tubal Pregnancy.—Rainer discusses the decidual reaction in the tubes with unilateral or bilateral tubal pregnancy during the first three months.

The Vaginal Flora.—Salomon found the vagina sterile in new-born infants. In treatment of leukorrhea, he advocates refraining from measures to destroy the saprophytes in the vagina. The aim should be to induce proliferation of certain strains of saprophytes so that they can conquer the harmful bacteria. Bacteriophagy may explain the self-cleansing power of the vagina, and point the way to effectual treatment of leukorrhea with bacteriophagic strains.

Radiotherapy of Carcinoma of Uterine Cervix.—Schmitt relates that of the 61 operative cases and 53 inoperable cases in which radium or roentgen rays were applied, between 1913 and 1916 (Würzburg), 22.2 per cent. have been permanently cured to date (22 in the operative group and 6 in the others).

Narcohypnosis.—Hallauer is fully convinced of the advantages of combining hypnosis with a very little chloroform as a systematic method of general anesthesia. He has applied it in more than 2,000 cases in the last fifteen years, and describes its technic and the results. This communication is published in "Society Proceedings" and is followed by the discussion which it elicited. Keller, Bumm and others told of using hypnosis for parturients. Hallauer ascribes a special action to the chloroform. It seems to induce a certain dissociation of the cortical functions which paves the way for the hypnosis.

Operative Treatment of Prolapsed Uterus.—Mackenrodt's illustrations show his method of extramucous cuneiform resection and interposition in treatment of the bleeding or myomatous prolapsed uterus.

Cancer After Roentgen Exposure.—Bumm reports six cases in which cancer developed in the uterus one to four years after roentgen exposures for myomas. The cancer may be a casual coincidence, or it may have been already installed at the time of the exposures, or the exposures may have induced an irritation that entailed cancerous degeneration. The extreme infiltration of the cells deep in the musculature, which was found in all the cases, speaks for this third assumption. In another case a carcinoma developed after a roentgen burn on the genitals in 1920. Both roentgen and radium rays had been applied in treatment of chronic pruritus dating from 1909. In 1921 the entire cancerous area was excised, from the pubis to beyond the anus. The cancer recurred and was resected twice, and there is now an inoperable recurrence. The case teaches the need for caution in exposing the external genitals, and for early excision of the injured area of skin in case a roentgen burn develops. In the discussion, Mackenrodt told of even more numerous similar experiences with women returning with cancer after roentgen or radium exposures for uterine myomas, many of them symptomless. In other cases he has witnessed the blood picture so modified by the roentgenotherapy that the women have never regained their former health. Bröse reported an instance of cancer of the ovary two years after a large bleeding myoma had subsided under roentgen and radium treatment. Endler reported three cases of a tumor of the pleura from six to twenty-four months after roentgen exposures following extirpation of a mammary cancer. The tumors partially subsided under his autoserum therapy, and he declares his success with this is throwing light on the etiology of cancer. It is not such a strictly localized affection as we have been assuming. He incriminates the blood serum.

Zeitschrift für Tuberkulose, Leipzig

38: 161-240 (May) 1923

*Tuberculous Abscess of the Liver. W. Gerlach.—p. 161.
The Primary Lung Focus in Children. M. Lange.—p. 167.
*Human and Bovine Tuberculin in Diagnosis. E. Nehring.—p. 182.
Nature of Human Tuberculosis. K. Arima.—p. 187.
*Origin of Chronic Lung Tuberculosis. K. Aoyama.—p. 189.
*Wildbolz' Method in Active Tuberculosis. W. von Friedrich and J. Laszlo.—p. 194.

Tuberculous Abscess of the Liver.—Gerlach found an abscess, 12 cm. in diameter, in the right lobe of the liver, at necropsy on a woman, aged 37. He thinks tuberculous abscess should have a fourth place in tuberculosis of the liver, beside miliary tuberculosis, biliary tract tuberculosis, and the tuberculosis with conglomerate of large nodules.

Human and Bovine Serum in Differentiation.—Nehring says that neither the cutaneous nor the intracutaneous use of human, or bovine, tuberculin shows definitely the type of the tuberculous infection. The difference in the degree of reaction to human and bovine tuberculin shown in the first inoculation may be reversed in the second. In all investigations of this kind it is important to work with tuberculin of definite toxic

content, the degree of toxicity being determined by biologic titration for each inoculation.

Experimental Studies on the Mode of Origin and Development of Chronic Tuberculosis of the Lungs.—Aoyama produced chronic tuberculosis resembling human phthisis in rabbits by inoculating their tonsils or soft palate with human tubercle bacilli, and found cavities in 31 per cent. of the nineteen animals, with lime deposits in 37 per cent., mostly in the adult animals. He found only few and unimportant changes at the point of inoculation in young animals, indicating difference in resistance of the young and the fullgrown.

The Value of Wildbolz' Method of Diagnosis of Active Tuberculosis.—Friedrich and Laszlo found Wildbolz' method of no practical value. They used it in thirty-two cases, and were unable to determine active tuberculosis from the reaction to the own urine.

Zeitschrift für urologische Chirurgie, Berlin

13: 93-196 (July 6) 1923

*Trauma and Hydronephrosis. M. Reisinger and G. B. Gruber.—p. 93.
*Bilharziasis of the Bladder. G. B. Gruber.—p. 99.
Incrusted Ulcer of the Bladder. P. Frank and G. B. Gruber.—p. 103.
*Intrarenal Hematoma. G. B. Gruber and P. Frank.—p. 107.
Cancer of Kidney Pelvis with Renal Malignant Lymphangiosis. P. Frank and G. B. Gruber.—p. 116.
*Trauma and Sarcoma of the Prostate. Gruber and Maier.—p. 120.
Asymmetrical Horse-Shoe Kidney. Gruber and Kratzenstein.—p. 124.
*Operative Enlargement of Bladder. W. v. Gaza.—p. 129.
Experimental Research on Kidney Innervation. Koennecke.—p. 157.
*Mechanism of Secretion of Urine. F. Lehr.—p. 164.

Trauma and Hydronephrosis.—Workmen's compensation was allowed in the case described, hematuria following a contusion of the man's right side. The right kidney increased in size and no urine could be drawn with the ureteral catheter. This kidney was removed, and the trauma and bleeding were incriminated for the rapid and serious aggravation of the previously existing slight hydronephrosis.

Bilharziasis of the Bladder.—Gruber gives photomicrographs of fragments of the bladder mucosa suspected of tuberculosis or cancer, but the lesions were found to be those of bilharziasis. The fundus of the bladder was opened, and two tumors and several nodules were resected. The entire area involved was removed piecemeal, and as each piece was excised, a piece of the musculature and mucosa was sutured with catgut to cover the defect. Thus the whole area was reconstructed step by step. The incision in the bladder was sutured with catgut in the inner tiers and silk in the outer. Complete recovery followed. Any ova left in the bladder must have died and become calcified.

Varicose Veins in the Kidney.—In the case described by Gruber and Frank there was an intrarenal hematoma from the renal artery. The kidney when removed showed conditions like those of a cerebral hemorrhage. In another case, both kidneys presented varicose veins. The woman had succumbed to multiple sclerosis. The walls of the renal veins indicated that the varicose changes were of long standing.

Trauma and Sarcoma of the Prostate.—Gruber and Maier know of only one case on record in which a sarcoma developed after a severe contusion of the bladder-prostate region. They describe a second case of the kind, but refuse to accept the trauma as a causal factor in either of the two cases. The trauma may have speeded up the malignant disease, but they do not consider it responsible for the sarcoma.

Enlarging Contracted Bladder.—Gaza's review of attempts to date to piece out the bladder with a segment of intestine to enlarge its capacity has shown that it is technically feasible. The intestinal tissue was retained intact, or it was crowded out by bladder epithelium, or there was necrosis of both bladder and bowel tissue. Mayer, Birnbaum and Scheele have each reported a successful case in which the capacity of the bladder, contracted by an inflammatory process, was thus successfully enlarged. Gaza here reports extensive experimental research in this line with illustrations of the outcome in nine dogs. The loop of bowel can be sutured to the bladder as easily as in entero-anastomosis. The bowel mucosa seemed to tolerate fairly well the contact with urine; particles of feces seemed to be responsible for cystitis when it developed. Either small intestine or large intestine can be utilised, but the small intestine has a tendency to become invaginated when implanted end-to-end. Although conditions are more favorable in dogs than in man, yet the experimental experiences are encouraging for a good anatomic and functional outcome in a bladder thus enlarged with a segment of bowel.

Mechanism of Urine Secretion.—Lehr compares the various theories and accepts Cushny's views as to the secretion of urine. He defines the share of the glomeruli and the tubules in the process, saying that the latter are able at need to do the work of the glomeruli, that is, to filter the salts and urea.

Zeitschrift für Urologie, Leipzig

17: 449-512, 1923

Pathologic Anatomy of Hypertrophied Prostate. M. Jacoby.—p. 450.
*Total Extirpation of Bladder. E. Joseph.—p. 458.
Calculi and Tuberculosis of the Kidney. Bitschai.—p. 463.
Pyelotomy Anterior or Posterior? M. Zondek.—p. 467.
Calculus Low in Ureter. Idem.—p. 467.
*Outcome of Traumatic Kidney Disease. A. Szenes.—p. 470.
Sodium Chlorid and Urine without Regard to Osmosis. G. Armbruster.—p. 494.

Total Extirpation of Bladder.—The extremely debilitated man, aged 51, lived for three months after removal of the bladder, filled with cancer tissue. The wound had healed and the drain introduced beforehand in each kidney was working well, but fatal metastasis developed. The colic pains in the bladder region ceased entirely after its removal. The bleeding from the bladder had stopped as soon as the urine was diverted. The bladder was removed under intraspinal anesthesia.

Traumatic Injury of the Kidney.—Szenes has reexamined 14 persons who had had a contusion of the kidney region between 1911 and 1922, and one with a gunshot wound of the kidney. Nearly all were free from disturbances of any kind, and only 4 showed any trace of albuminuria. One case shows that contusion of the kidney is liable to entail chronic nephritis if the kidneys are already suffering from some toxic action, lead poisoning in this case. The injury of one kidney threw too much work on the other, and the latter developed severe chronic nephritis with hypertension, retinitis, etc. The mortality of the total 28 cases of contusion of the kidney and 2 gunshot wounds was 37.5 per cent. Chromocystoscopy showed no difference between the two kidneys in 8 of the 10 recently reexamined; in 2 cases there was a delay of two minutes on the affected side. There was no instance of traumatic hydronephrosis, but there was a stricture in the ureter in one case.

Zentralblatt für Chirurgie, Leipzig

50: 1153-1200 (July 28) 1923

Treatment of Suppurative Processes without Tampons. Reimer.—p. 1154.
*Injection of Ether in Diffuse Peritonitis. C. Weber.—p. 1157.
Operative Treatment of Very Large Hernia. Pototschnig.—p. 1158.
*Operative Cure of Quadriceps Paralysis. M. Katzenstein.—p. 1161.
Formation of Nearthrosis of Hip Joint. S. Kofmann.—p. 1162.
Bandaging for Basal Skull Fracture. A. Schanz.—p. 1166.
Better Results in Orthopedic Osteotomies. A. Schanz.—p. 1167.
"Cuff Method of Anastomosis After Stomach Resection." R. Goepel.—p. 1170.
"Management of Stump After Cholecystectomy." Enderlen.—p. 1172.

Fatal Outcome from Injection of Ether in Diffuse Peritonitis.—Weber reports that, after using injections of ether with favorable results in about 100 cases of diffuse peritonitis, he has recently experienced a fatality in the death of a young woman, aged 21, with appendicitic peritonitis. He thinks it safe to assume an ether intoxication with paralysis of the respiratory center in the medulla oblongata, superinduced by a heart weakened by a previous attack of influenza. A healthy organism might have been more resistant. He has lost confidence in the absolute harmlessness of such injections of ether, and henceforth he expects to proceed more cautiously in dealing with weakly individuals and children. Weber holds, nevertheless, that ether exerts often an astonishingly favorable effect in almost hopeless cases. He injects ordinarily from 80 to 100 gm.

Abdominal Muscles Used to Supply Force to Paralysed Quadriceps.—Katzenstein's patient was a girl, aged 12, with complete paralysis of the left leg. He made two tendons out of skin, and connected the rectus and the obliquus muscles with the quadriceps.

Zentralblatt für Gynäkologie, Leipzig

47: 1121-1152 (July 14) 1923

Fibromyoma of the Urethra. R. Michaelis.—p. 1121.
*Dilatation of the Urethra in Gonorrhea. E. Vey.—p. 1124.
*Management of a Resected Ureter. E. Löwy.—p. 1128.
Gangrenous Cystitis Dissecans Due to Retroflexion of an Incarcerated Gravid Uterus. B. Schweitzer.—p. 1140.

Dilatation of the Urethra in Urethral Gonorrhea in Women.—Vey dilates the urethra until the walls are perfectly smooth, which makes it accessible in all its parts to the remedy to be applied. As a rule, two or three applications of the remedy at from eight to ten day intervals are then sufficient to effect a cure; sometimes one application suffices. In stubborn cases, in addition to local treatment, simultaneous general treatment should be employed. What disinfectant shall be used is of secondary importance.

Management of a Resected Ureter.—Löwy refers to operations on large tumors or malignant new growths of the uterus, in which it is impossible to dissect the ureter free from the surrounding tissues but after resection it is found that implantation in the bladder cannot be carried out. He discusses the three usual methods of procedure: the Stoeckel, the Stoeckel-Kawasoye and the Poten methods. Löwy obtained good results in four out of ten cases in which he used these methods. He found the knotting of the ureter by the Stoeckel-Kawasoye method the least reliable, since it does not prevent the ureter from becoming fistulous. He secured the best results (in two cases a good lasting effect) with the Poten method which consists in torsion of ureter, the tied-off end being twisted three times and fastened to the pelvic connective tissue by two sutures which also grasp the covering peritoneum, whereby a perfect closure of the lumen of the ureter is brought about. As one is not sure, for several weeks, whether the closure of the ureter is going to hold, it is necessary to keep the parametric wound toward the vagina open for weeks.

Finska Läkaresällskapets Handlingar, Helsingfors

68: 399-490 (July-August) 1923

*Torsion of the Testicle. H. Bardy.—p. 399.
*Organic Basis for Epilepsy. P. Geitlin.—p. 411.
*Periarterial Sympathectomy. H. Elving.—p. 422.
Origin of Tar Blood Cysts in the Ovaries. B. Nyström.—p. 433.
*Intra-Uterine Tampon for Postpartum Hemorrhage. O. A. Boije.—p. 451.
*Shoulder Pains in Rupture of the Tube Wall. O. E. Cederberg.—p. 462.
Vagitus Uterinus. B. Nyström.—p. 469.

Torsion of the Testis.—In Bardy's two patients the testis on the side of the pains was tender but seemed normal, as also the spermatic cord, but the epididymis was swollen, tender and contained palpable hard nodules. Operation in both cases showed the reddish brown testis suspended free in the serous sac, the epididymis purplish. The twist was 360 degrees to the right in one case and to the left in the other. If the blood supply is not restored within twenty-four hours, a hemorrhagic infarct will lead to either aseptic necrosis or inflammation. The torsion in the man had occurred while he was pushing a car, and in the youth while skating. As a rule torsion can occur only in the presence of a congenital anomaly and, given the anatomic condition, may take place even during sleep. For this reason he believes that in case of accident insurance, indemnity is not recoverable for torsion of the testis unless accident can be proved as cause.

The Origin and Mechanism of Epileptic Convulsions.—Geitlin agrees with those who accept a more or less incomplete form of tuberous sclerosis as the lesion in the cortex responsible for epilepsy. The foci of sclerosis are always circumscribed, and may be visible, or only perceptible to the touch, or revealed only by the microscope. The foci resemble the lesions of multiple sclerosis of the brain and, like them, are of embryonal origin. In one brain he has been studying, the cortex was scattered irregularly with numerous foci of this kind, and he theorizes that the resulting impairment of cortical function prevented the cortex from exerting its normal inhibiting function on the play of the subcortical centers. When a motor subcortical center became irritated by some toxin, as the restraining influence of the cortex was in abeyance, tonic or clonic convulsions ensued. These convulsions may range in intensity from slight local muscular spasms to the genuine epileptic seizure, according to the extent and intensity of the cortical lesion and of the toxic action. The reason why epilepsy does not occur in all idiots and imbeciles, he suggests, may be because the subcortical centers are too pathologic to respond.

Periarterial Sympathectomy.—Elving studied the capillary circulation in connection with periarterial sympathectomy in twelve cases. An improved capillary circulation followed the operation in four; in two the capillary contraction declined, and in the others no results were found microscopically. It is not sufficient to separate the adventitia from the vessel; it must be removed to insure a complete and permanent break in the innervation. Improvement in the capillary circulation followed the operation in one case of severe arteriosclerosis but was absent in two. It brought temporary improvement in ischemic paralysis of the musculature of the leg in a girl, and in a diabetic man with ulceration of the foot. He recommends the operation in neurotrophic and angiospastic conditions when other methods of treatment have proved ineffective. In his one case of neurotrophic ulcer, the deep, offensive ulcer on the instep had resisted all treatment for months but healed completely in three weeks after the sympathectomy.

Packing the Uterus with Gauze in Postpartum Hemorrhages.—Boije has found that intra-uterine tamponage, contrary to general belief, decreases the danger of infection, and he recommends extension of indications for tamponage to avoid unnecessary loss of blood. He describes the method with Stille's instrument for aseptic introduction of the gauze, and his favorable experiences with it in 114 cases, with no mortality nothwithstanding the extremely complicated cases.

Pain in the Shoulder in Connection with Rupture of Fallopian Tube.—Cederberg found radiating shoulder pains in six of seventeen patients with rupture of the tube. These remote phrenic pains—so-called phrenic neuralgia—occur paroxysmally, intensified during deep respiration. He found bilateral pains in one case of rupture of the left tube, and in one of rupture of a left pyosalpinx. They may result from direct irritation of the sympathetic, without the intervention of the diaphragm.

Hospitalstidende, Copenhagen

66: 505-520 (July 18) 1923

*Diverticulum of the Bladder. A. Sennels.—p. 505.
Ammonia in Urine. G. E. Schrøder.—p. 512. Cone'n, p. 521.

66: 521-540 (July 25) 1923

Dreyer's Vaccine Against Tuberculosis. O. Thomsen.—p. 536.

Diverticulum of the Bladder.—Sennels recommends injecting 100-150 c.c. of a 10 per cent. potassium bromid solution into the bladder and directing the roentgen rays so that the shadow of the diverticulum is projected free of that of the bladder. This gives the best information of the diverticulum's size and relation to its surroundings, and explains the symptoms, from slight dysuria to those from uroplania or pyonephrosis. Operation becomes more dangerous when delayed. He shows by collected statistics a mortality of 80 per cent. as late as 1912, but now it is scarcely 10 per cent. He thinks the suprapubic extravesical method ideal in cases in which it can be used. He prefers the suprapubic combined intravesical and extravesical method to the purely intravesical. Instead of removing the diverticulum, he draws it into the bladder, where it is held in place while the bladder wall is sutured. When released, it smooths out and feels to the touch like a soft mucous membrane. In his operation the diverticulum was not very large, but as the epithelium of the mucous membrane of the bladder is divided from the muscular coat by areolar tissue, he believes that larger diverticulums would also flatten out. Fistulas may thus be avoided.

CORRECTION

Facial Paralysis in Acute Poliomyelitis.—In the abstract in THE JOURNAL, September 29, p. 1152, the number of cases of facial paralysis in children with acute poliomyelitis was eleven in 1922 and three in 1923 to date, a total of fourteen, not fifty-four as stated.